a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JANUARY, 1957

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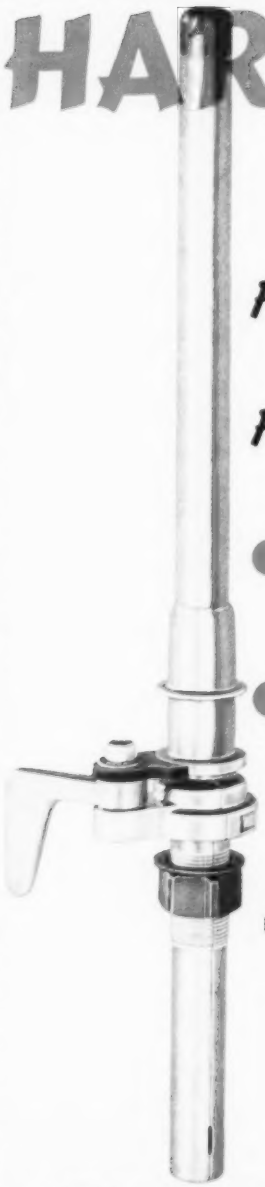
HARTFORD HAS IT!

For Your Largest Spinning Package

For Your Lowest Yarn Counts



- Heavy Running Gear
  - Heavier Blade
  - Heavier Bearings
  - Longer Base
- Exclusive Cam Action Brake
  - Hand Operated
  - Positive Latch
  - Sturdy Construction

HARTFORD

Pre-Lubricated Ball-Bearing

SPINDLES

For Twisting & Spinning

Run an Estimated 5 YEARS with NO LUBRICATION

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4

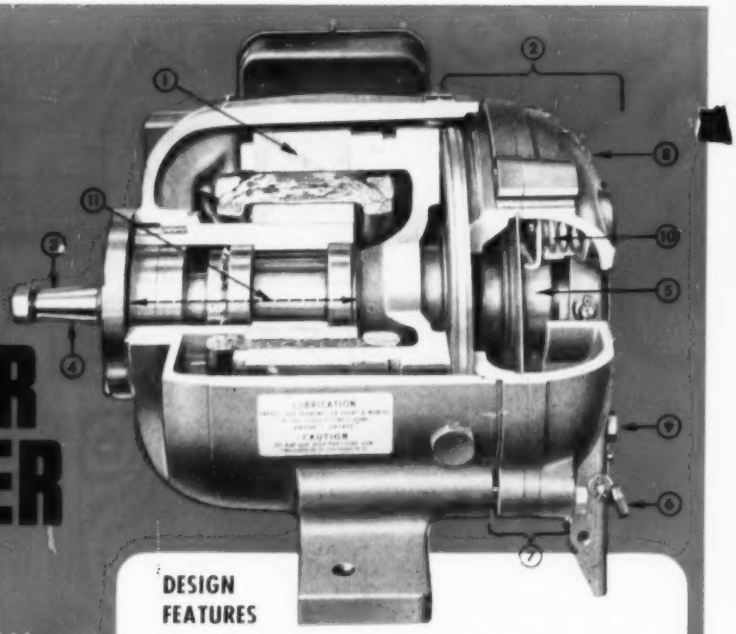
Coming next month: Another special section on PURCHASING

Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

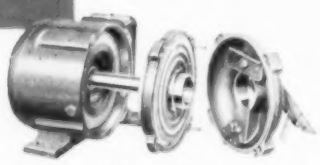


DESIGN FEATURES

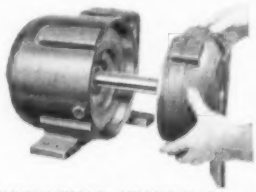
*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

The original and only loom power transmitter . . . plus many new and outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The new "BA" Power Transmitter is even *more* compact, more streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive new design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

plus these outstanding New Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

*Exclusive feature—patent protected.

Diehl

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

BALTIMORE • CHAMBLEE, GA. • CHARLOTTE, N. C. • CHICAGO • CINCINNATI • MILWAUKEE • NEEDHAM, MASS. • NEW YORK
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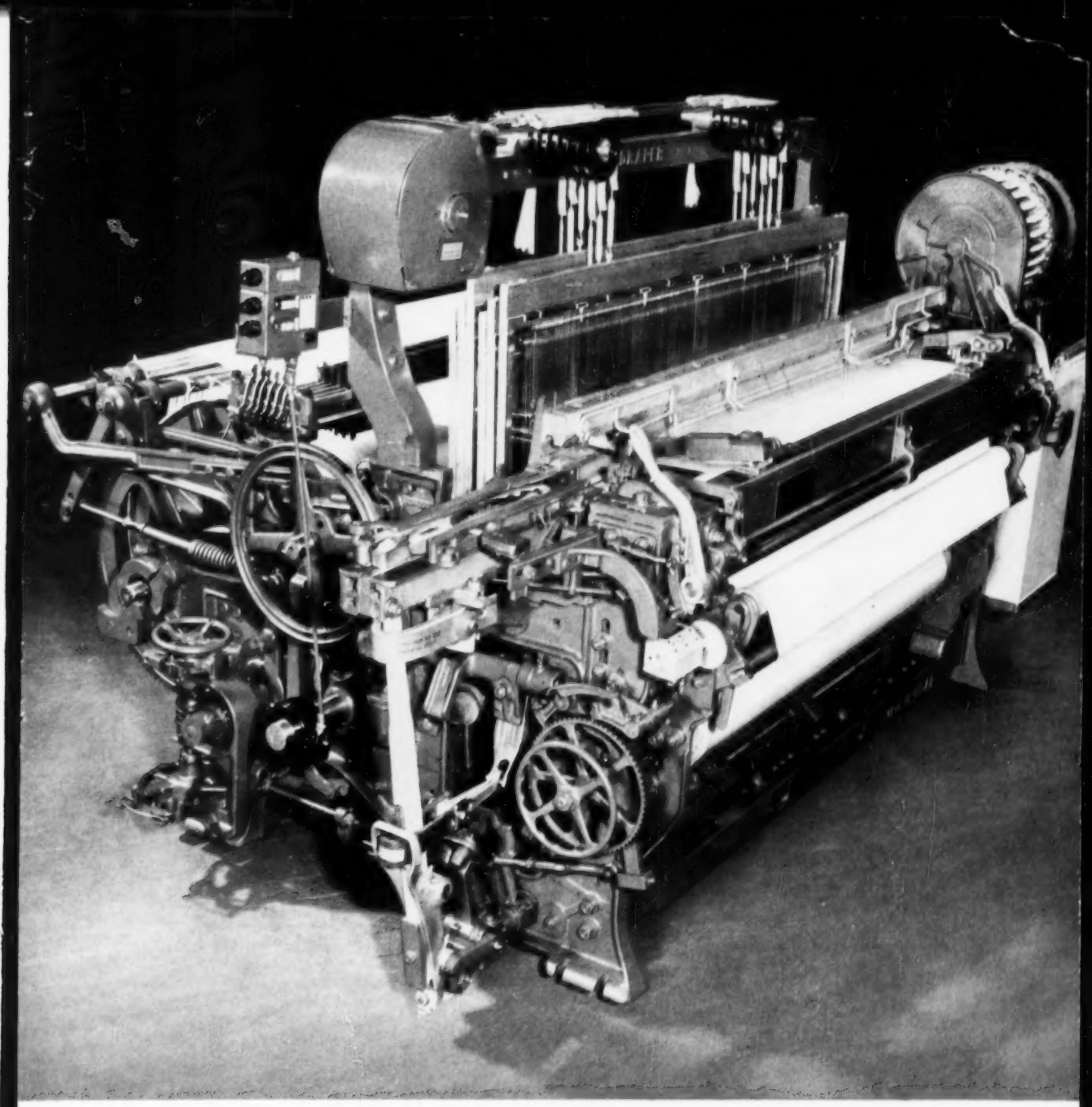


This loom gives you all the competitive advantages

Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

The changing fashions in cotton and synthetics create a need for a loom which can be converted on short notice to weave a wide variety of fabrics.

The X-2 with its ability to weave cottons or synthetics equally well, answers this conversion problem.

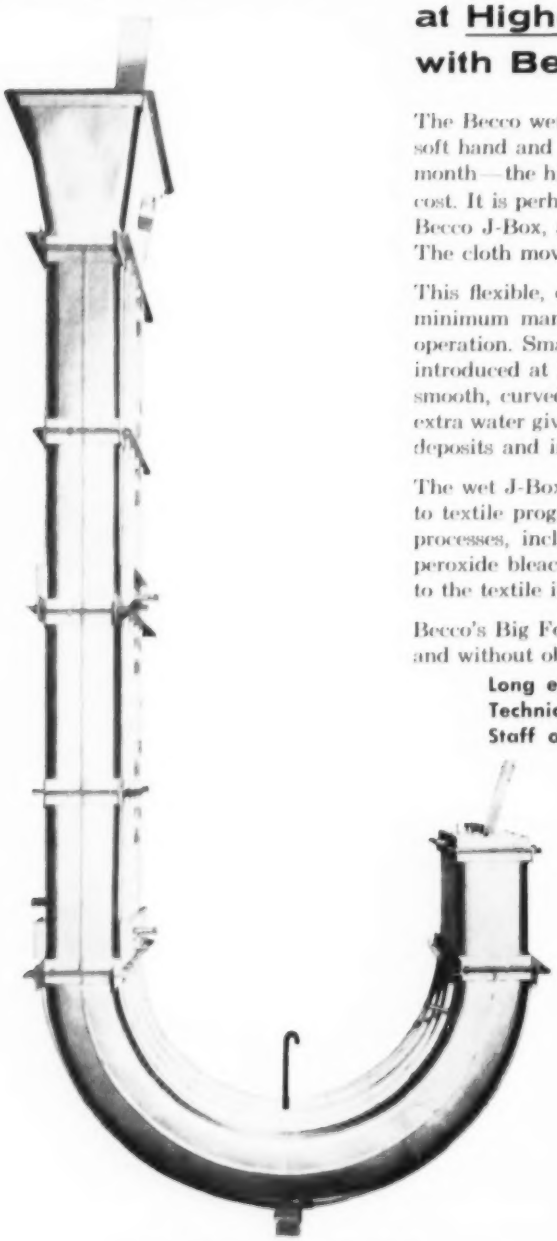
The combined advantages of the Draper X-2 mean . . . higher mill profits.

DRAPER CORPORATION

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*

the shape of profits

Uniform, Continuous Bleaching at Higher Speeds with Becco® Hydrogen Peroxide



The Becco wet J-Box Process* gives improved dyeing properties, soft hand and uniformity for all types of fabrics month after month—the highest production of first quality goods at lowest cost. It is perhaps the greatest development since the original Becco J-Box, and an important profit-builder for you. The cloth moves fast—up to 400 yards per minute.

This flexible, continuous operation is simple to control with minimum man-power, and provides trouble-free 24-hour-per-day operation. Small quantities of hot water continuously introduced at the bottom help goods slide freely through the smooth, curved section without pull, snarl or tangle. The extra water gives an effective preliminary wash, reduces surface deposits and improves dyeing quality.

The wet J-Box Process is but one of Becco's major contributions to textile progress through J-Box systems and patented processes, including the silicate-free formulas for continuous peroxide bleaching of cottons . . . all freely licensed to the textile industry.

Becco's Big Four are available to you upon request and without obligation:

Long experience in bleaching technology
Technical Literature
Staff of Technically-trained field representatives
Strategically-located supply facilities

*U.S. Patent 2391905

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Let us put you on our mailing list to receive "Becco Echo", an informative quarterly publication on interesting applications of peroxygen chemicals.

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 121, No. 1
January, 1957

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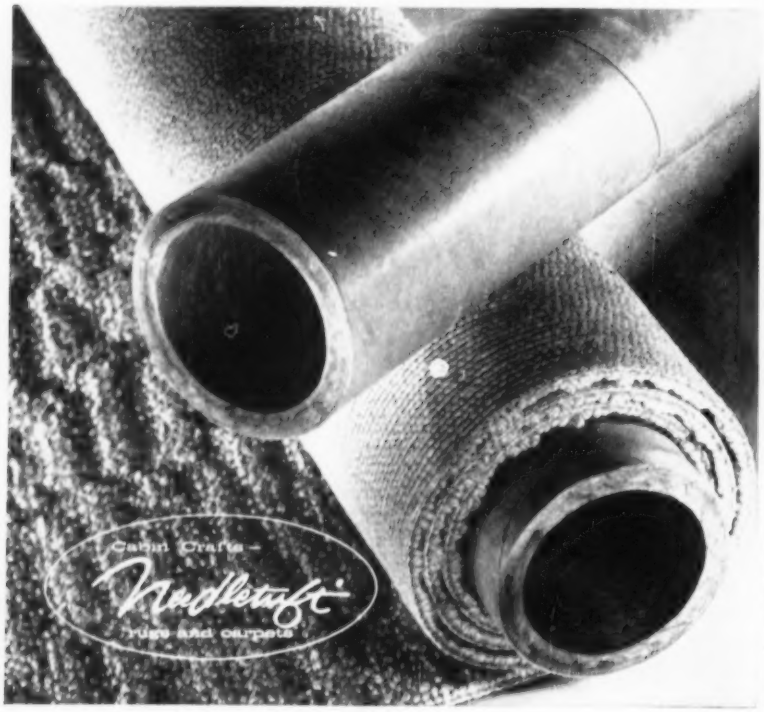
Needletuft carpets

deserve good cores... and get them!

Textile Paper Products' "Ironfibre" fills the bill



CABIN CRAFTS-NEEDLETUFT RUG MILLS, Dalton, Ga., said to us: "Show us a lightweight, quality core with terrific end-to-end strength—see that it's economical—and we can do business."

Today, the splendid carpets created by Needletuft and wound around our "Ironfibre" cores are sold in fine stores throughout America.

Are there special tube requirements that would be advantageous to your mill? Let's talk about them.

TEXTILE PAPER PRODUCTS, INC.

Manufacturers of better Tubes, Cores, Boards, Car Lining and Beaming Paper

Home Office Cedartown, Ga.
Plants in Cedartown, Crossett, Ark., Bogalusa, La.

Shorts and Remnants

by J. C. C.

► Before we get too far along, in case you didn't notice the date on the front, this here is another year—1957. And old S&R just wants to wish everyone of you the best for all the year—a Happy and Healthy 1957. Just so you don't forget it—

"This old World we're livin' in—
It's mighty hard to beat.
You get a thorn with every rose,
But ain't the roses sweet."

That's not original, but neither is Happy New Year. Now don't write and tell us it isn't exactly New Year because Pope Gregory XIII dropped ten days from the old "Julian" calendar in 1582, and actually Jan. 1 was about 2 weeks ago, before Christmas. Or would that make it two weeks from now? Or do we still go on losing or gaining days in the present calendar over the old one? Anyway, that's 374 years ago on this calendar, so I guess it's here to stay.

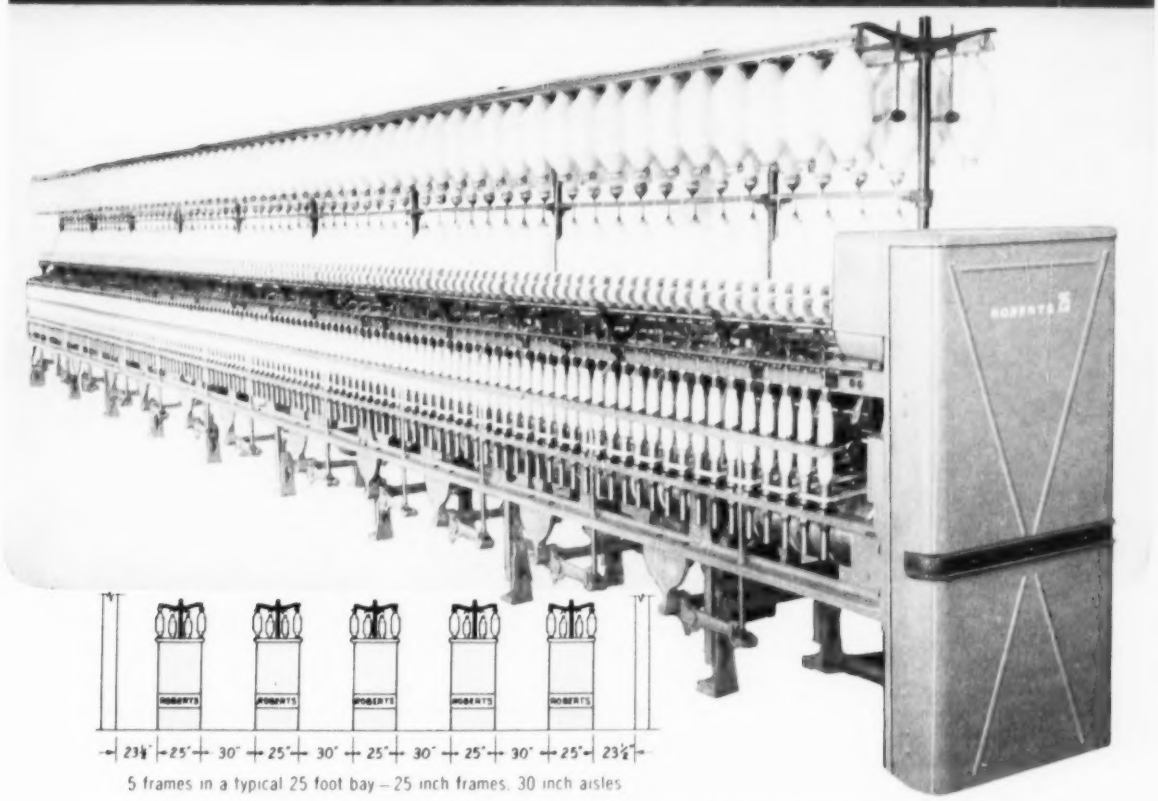
► Like the Republicans? The election is long past, but we still want to tell **W. Earl Smith,** textile consultant, Eddington, Bucks County, Pa., that his letter announcing his candidacy for Pres. of the U.S.A. ("The Constitutional Republican Party") arrived too late; so we didn't get to paste his sticker on our ballot. Come to think of it, how could we handle that with a voting machine? Guess he didn't think of that. Maybe that's the reason he didn't get elected. S&R likes the story of the guy who said he voted for Stevenson in 1952 and he had never had it so good; so he figured he had better vote for him again.

► **William E. Clark,** V.P. & Gen. Mgr. Textile Div. U.S. Rubber Co., says that his division will maintain its high rate of sales for the coming year, according to a news release from this company. He says their total sales volume has increased 85 per cent in 15 years and "an increasing percentage of the textile division's sales has been in new products introduced in new markets."

► S&R got down-right flattered over all the folks sending in for copies of the reprints offered here in November. Of course they were free,

ROBERTS 25 SPINNING FRAME

- 25 inches wide
- 25% more yarn from same floor space
- 25% less building for same production
- 25% saving in building and utility cost



5 frames in a typical 25 foot bay – 25 inch frames, 30 inch aisles

TRIED AND PROVEN. The Roberts 25 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. It embodies all the tried and proven features most wanted in a modern spinning frame giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics or blends.

SMALL, MEDIUM OR LARGE PACKAGES. The Roberts 25 Spinning Frame is available in gauges from 3 inches to 4½ inches and can be arranged for direct filling on 8 or 8¾ inch quills or for warp up to a 3 inch ring and 12 inch bobbin.

ALL BALL BEARING HEAD. The all ball bearing head design is outstanding in its simplicity and flexibility. Thirty greased-for-life ball bearings of one size are used and all plain bearings and studs eliminated. All gears in the head are hardened and have one pitch, one width, one bore and one size key, making them completely interchangeable. Two wrench sizes fit all shafts and tightening points. Draft Constant can be varied simply from 400 to 3200 and Lay adjusted for coarse or fine numbers by a simple gear change.

STANDARD FEATURES

Included as standard equipment are Roberts Ball Bearing Spindles, Roberts built-in Suction Cleaning, Roberts AeroCreels and 8 inch Cylinder Drives.

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability – and, at the lowest investment per spindle – Roberts Spinning is second to none in America today.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

OUTPERFORMS — OUTSELLS
ALL OTHERS COMBINED!

BOTH HEAD AND BASE SWIVEL FOR ADJUSTMENT

SAVES LABOR

EASIER TO INSTALL

TAKES LESS FLOOR SPACE

McDONOUGH
UNIVERSAL CARD COILER
(Patents Pending)

This coiler is its own best salesman. It outsells all the rest put together because it out performs all others. It saves labor by putting more sliver in the can. Its quality construction, including sealed ball-bearings, hardened steel gears, etc., means extra years of dependable service. Ask for free folder with complete specifications.

Let this coiler prove its worth to you in your mill. Have one installed on a

90 DAY TRIAL *Without Obligation*

Since 1890

McDONOUGH POWER EQUIPMENT, INC.
MACHINE & FOUNDRY DIVISION
McDONOUGH, GA., U.S.A.

Shorts and Remnants

but then you had to ask for them. **R. E. Miller,** supt. dyeing and finishing, Braunsberg Bros., East Paterson, N. J., even added a "Hi JCC—Enjoy reading TI—Always read Shorts & Remnants first. . . . " To Mr. Miller we say "Hi and thanks a million." Anyway, the response was so good, we are going to look around and see if we don't have a few more reprints to offer.

► Another recipient of reprints on dyeing cotton, **Z. J. Schaeffer,** Dominion Textiles, Ltd., Montmorency, Que., Can., writes to ask how much he should pay for them. He says "the subscription rate for your magazine is so low that I should be ashamed to ask you . . . for a favour if I could not pay for the services." Come to think of it, TI is a big package for the money, even including the big ANNUAL EQUIPMENT PARADE & BUYER'S GUIDE extra or 13 issues in all.

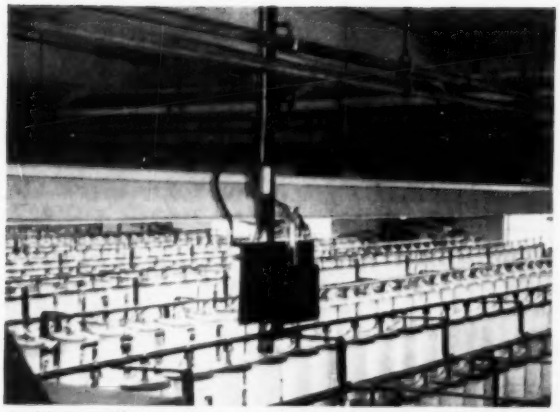
Lots of folks agree, so a salesman calling on the mills writes " . . . been advocating very strongly that they advertise in your magazine . . . I feel that I see your magazine in the mills more often than I do any of the others." Thank you, and we still have some advertising to sell (to select suppliers, of course).

► We thought that Lovable Brassiere Co., Atlanta, had the prize name, but a competitor is featuring "The Wizard of Bras." And Burlington Industries is no slouch on this merchandising with their getting the Duke of Argyll to endorse "Argyll" socks, even to making personal appearances. That must have cost a pretty penny.

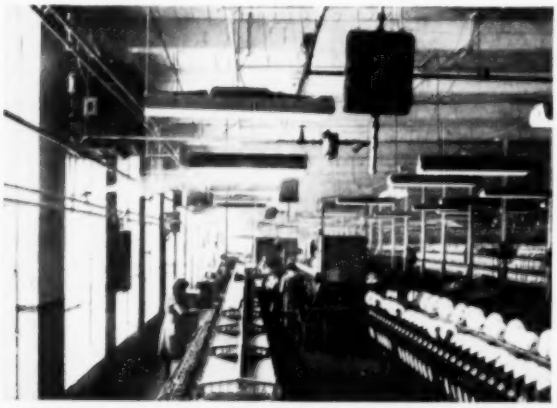
► An interesting story of a family is told in "The Cokers of Carolina" by Geo. Lee Simpson, Jr., just issued by University of North Carolina Press, Chapel Hill, N. C. (price, $5.00). It traces the Cokers of Sonoco Products Co., Hartsville, S. C., back to pioneer and pre-war (Civil) days. We were surprised to learn that Carolina Fiber Co. was first to chemically produce paper from southern pine; also to note the prominent educators, farmers, etc., in this family.

► **D. B. Katrack,** gen. mgr., Khatau Mills, Bombay, India, is coming to U. S. A. Mar.—June 1957, wants date on any exhibits and "best time and important places to visit in our coun-

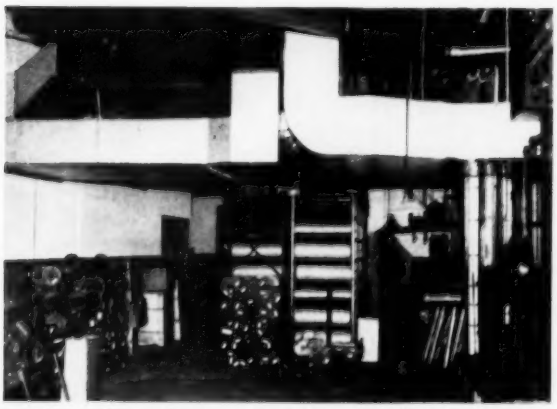
For further information use Handy Return Card, Page 187



AMCO Humidification System installed at Caron Spinning Company, Robesonia, Pa. The highly sensitive AMCO Cyclestat Control holds humidity within narrow limits



AMCO Evaporative Cooling System in Texas Textile Mills, McKinney, Texas. Note window units which control mixture of fresh and recirculated air.

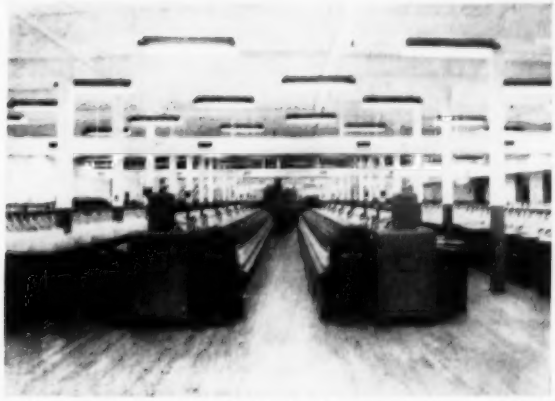


AMCO Unit Dry-Duct System at The Windsor Manufacturing Company, Philadelphia, Pa. The entire unit is installed overhead out of the way.

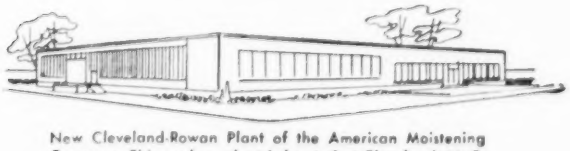
There's an AMCO AIR CONDITIONING SYSTEM designed for YOU!

When you think of air conditioning, remember that AMCO offers systems and equipment for every manufacturing requirement and every climatic condition. There are four different types of AMCO systems, alone or in combination: humidification, evaporative cooling, unit dry-duct, or central station air conditioning. And because AMCO engineers have these four basic systems — plus all associated equipment and controls — they are able to offer you unbiased advice on the *best* system for your particular need.

If you want the facts about textile mill air conditioning, with the advantages and limitations of each system detailed, as well as answers to such questions as cost, adaptability, capacity, maintenance and operating expense, write for AMCO's booklet, "AIR CONDITIONING for the TEXTILE INDUSTRY". Or better still, ask AMCO to recommend, without obligation, the system best suited to your mill.



AMCO Central Station Air Conditioning in the Roving Dept., Highland Park Mills, Charlotte, N. C. This is AMCO's highly efficient split system.

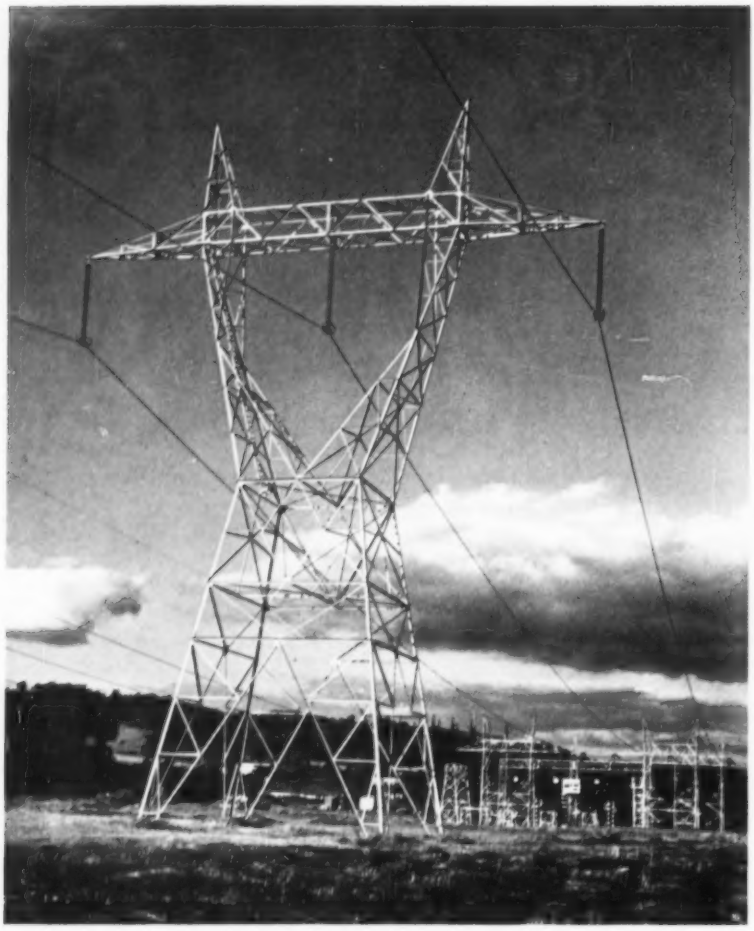


New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, CLEVELAND, NORTH CAROLINA • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I.



ELECTRICITY...

Electricity is defined as one of the fundamental quantities in nature, but NOBODY knows what it is.

One thing for sure, though . . . it's the lifeblood of your mill. Kind of like a woman—impossible to understand but *absolutely essential.*

That's why it's so important to select the *best* electrical contractor for your mill . . . and this means J. M. CLAYTON CO. You'll hear the name mentioned wherever electrical contracting is being discussed.

SERVING THE TEXTILE FIELD FOR 51 YEARS

J. M. CLAYTON CO.

CONTRACTING ELECTRICAL ENGINEERS

ATLANTA, GEORGIA

Shorts and Remnants

try." He says, "We find your magazine really interesting." Thank You.

► **Walter M. Kelly,** pres., Commercial Factors Corp., is quoted as saying that textile and apparel research is "wholly inadequate and unrealistic." He cites surveys showing textiles spending only 4/10 of one per cent of sales on research as opposed to an all-industries average of one per cent.

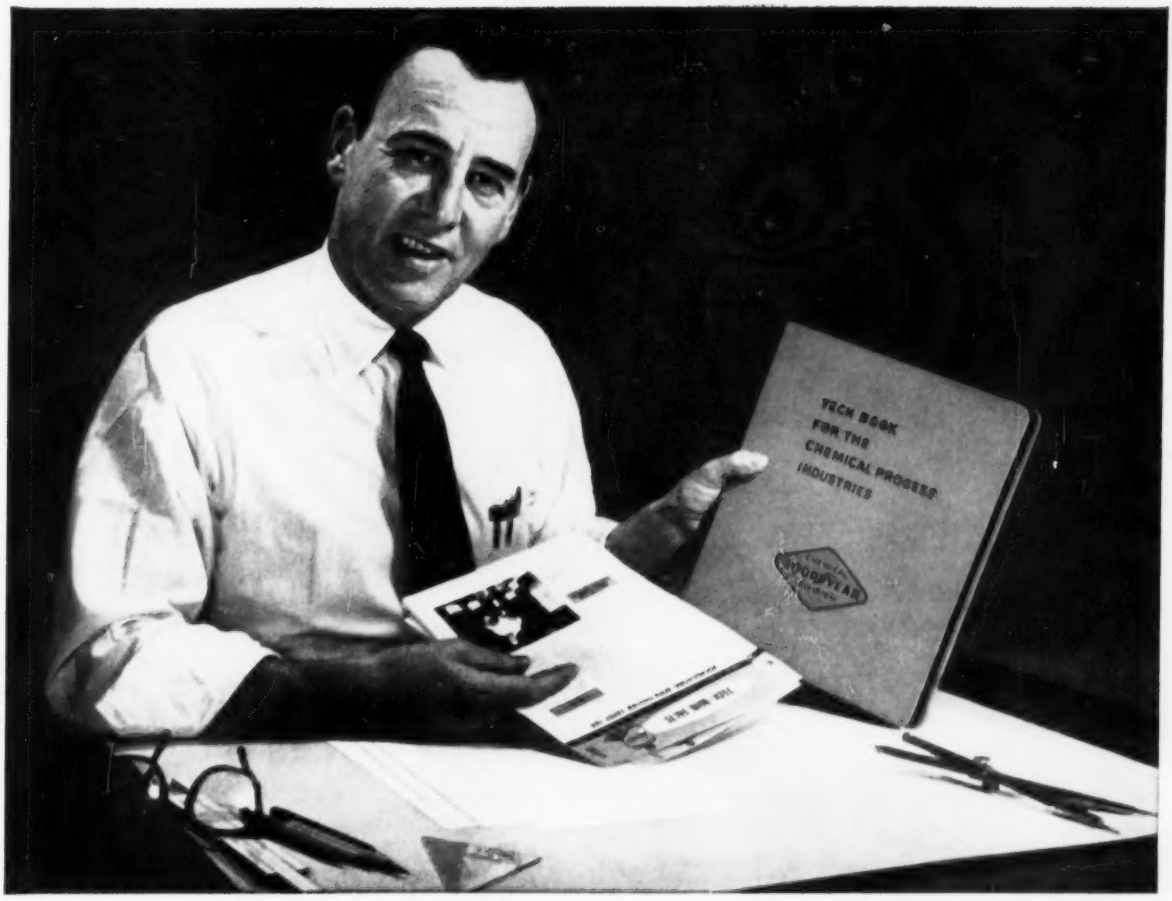
► Get out your magnifying glass and see if you can't locate some familiar faces such as Dal Neese, Geo. Bachelor, Hugh Graham, T. M. Bailey, Bob Dorman, etc., of Odell Mill Supply, Greensboro, N. C., and Greenville (S. C.) Textile Supply Co., in the picture below. This was taken

at a Sales Seminar of Lestershire Spool Div. National Vulcanized Fibre with these two good supply houses at the Johnson City, N. Y., plant of Lestershire.

► You shouldn't need the magnifying glass though for the 1957 model from John Heathcoat & Co. Ltd., one

of largest swimsuit fabric concerns in England. P. S. Our editors said "no room for this in high production stretch yarn article soon to be appear in TI," but ole S&R has room for it.

(Continued on page 10)



Now—A "Living Textbook" on Latex for You

Pictured above is the start of a new service to you from Goodyear. It's the *Tech Book for the Chemical Process Industries*—a compilation of technical information on the resins, rubbers, latices and related chemicals offered by the Chemical Division.

Of particular interest to you will be the sections of the Tech Book devoted to the complete line of latices manufactured by Goodyear. For here you'll find straightforward, detailed information on where, why and how to use the PLIOLITE Latices (both styrene rubber and resin types), the CHEMIGUM Latices (nitrile rubber type) and the PLIOVIC Latices (vinyl resin type) in superior sizes, saturants, inks and adhesives.

Moreover, this is just the "starter" of Tech Book service. It comes in a convenient, loose-leaf form so that it can be readily supplemented by periodic bulletins to keep *it* alive and *you* fully informed. Write today, on company letterhead, for your Tech Book and the start of the complete story on PLIOLITE, CHEMIGUM AND PLIOVIC LATICES plus other materials you can use to advantage. Address: Goodyear, Chemical Division, Akron 16, Ohio.

CHEMICAL
GOODYEAR
DIVISION

COATINGS
DEPARTMENT

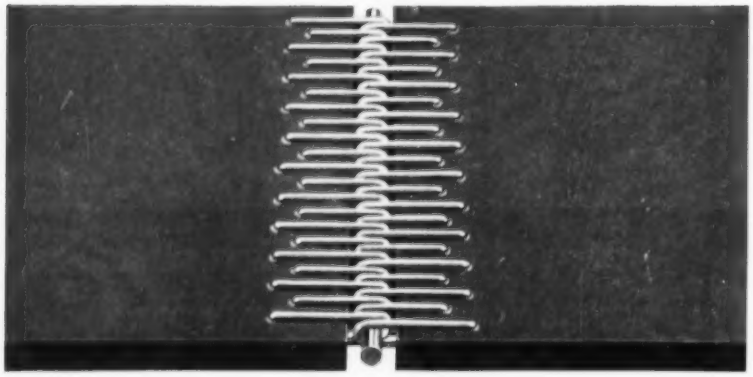
Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries

Clipper

HOOKS and LACERS save money 2 ways



Make replacement less frequent — speed replacement when needed

Clipper machine-lacing installs Clipper Belt Hooks under great pressure quickly and easily. Once Clipper belt hooks are inserted, they're in to stay. Clipper machine-laced joints outlast other belt joints several times over — slashing maintenance needs and unproductive downtime. And when worn belts must be replaced or slack belts tightened, the Clipper machine method is faster than other methods. Exerting up to 45,000 pounds pressure, Clipper Belt Lacers lace belts up to 12 inches wide all in one operation, again slashing maintenance time and unproductive downtime.

FOR MORE INFORMATION

Detailed product information and case history examples of Clipper machine-lacing benefits are contained in Bulletin No. 157. Send for your free copy today.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W. Grand Rapids 2, Michigan

Shorts and Remnants

(Continued from page 8)

Purchasing Helpful

"Would you kindly send me an additional copy of 'Purchasing for the Textile Industry' (Feb. '56). I found this pamphlet to be very helpful and of particular interest upon reading of the various purchasing methods and policies used in the textile mills . . ."

WINSTON O. BURGESS
Bachmann Uxbridge Worsted Corp.
Uxbridge, Mass.

► Reprints still available on "Purchasing." Look for another special on this subject next month.

Here We Go Again—"Ultrasonics"

"I have read with interest your article entitled 'Ultrasonics in the Textile Industry' (Mar. '56) . . . I am particularly interested in finding out where we might obtain a transducer with the tubular shape as shown in the lower right hand corner of the sketch on page 109 in the above mentioned issue."

WM. F. PHILLIPS
Anderson-Clayton & Co.
Houston, Tex.

How to Hire Office Personnel

"We noticed . . . a free pamphlet entitled, 'How To Hire Office Personnel' (May '56) . . ."

N. G. HARDIE
Mgr. Chicopee Mfg. Corp.
Walhalla, S. C.

► Above pamphlet mentioned in TI from Martin Pub. Co., Box 2632, San Diego 12, Calif.

Training Seamer Operators ('53)

". . . Would it be possible to obtain a couple of reprints of the article 'Training Seamer Operators' (Apr. 1953) . . .?"

W. E. ALLEN
Asst. Mgr. Nordic Hosiery Ltd.
Granby, Que., Can.

► Yes, and we still have a few.

Materials Handling ('50)

"We should be very grateful if you could let us have a copy of . . . 'Materials Handling at Borden Mills' (Aug. '50) . . ."

DIANA MOULD
Production-Engineering Ltd.
London, S.W.1, Eng.

One of the Best

"I am an ardent reader of TEXTILE INDUSTRIES and consider it one of the

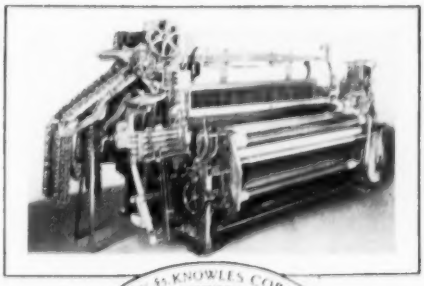
yes, it pays to *dress*

...and not like a mess!

When you see a person walk off with the prizes . . . in *any* walk of life . . . that person is almost always well-dressed, in clothes that are well-woven, cut and tailored. For *good* clothes are badges of self-respect that command respect in others.

Today, the street scene is brighter than ever . . . with new and different fancy fabrics that show more imagination in design than ever before. And the looms that *take the handcuffs off designers* are C&K's new Multi-Purpose line, convertible overnight from plain to fancy fabrics and back again . . . C&K's W3 and W3A Woolen and Worsted Looms with the exclusive Select-A-Pic that puts many non-automatic pick-and-pick fabrics into the profitable field of *automatic* weaving . . . and C&K Jacquards which add almost unlimited magic to many types of fabrics.

Retail slogan of the year is: "Dress right — you can't afford not to." Slogan of the year for every weaving mill should be: "Protect your profits with C&K Fancy Automatic Box Looms — *you can't afford not to.*"



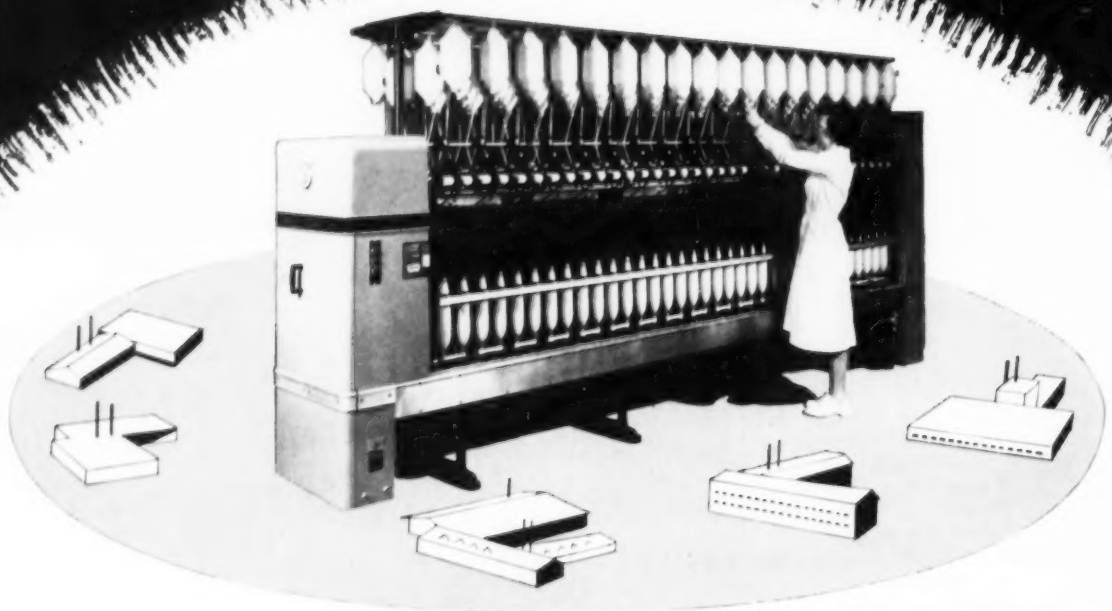
CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U.S.A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada, Ltd., Montreal, Quebec

The Performance of SACO-LOWELL GWALTNEY SPINNING FRAMES*

IS PRODUCING A NEW ERA OF LOWER COSTS, HIGHER PROFITS AND IMPROVED YARN QUALITY.



Your mill can match these new Standards of Production with a Gwaltney Installation.

MILL A

Count	T. M.	Ring Size	F. Roll Speed	Eff. ** %	Net Pounds Per 1/1 Frame Per 24 Hours
7.25's	2.85	3"	200	94	930
10's	2.94	3"	201	95	686
11's	2.94	3"	197	95	611
13's	2.94	3"	199	95	523
17's	3.00	3"	186	96	378
18's	3.00	3"	185	96	355
24's	3.12	3"	155	97	224
26's	3.25	3"	147	98½	200
28's	3.25	3"	143	99	182

* Efficiency includes traverse change and frame change doff times.
** Taken from actual Hank Clock data readings on 240 spindle frames.

MILL B
WARP

Count	Twist Multiplier	Twist per Inch	Spindle Speed	Ring Size	Traverse Speed	Front Roll Speed	Eff. Factor %	Net Pounds per Spindle per Hour
12	4.30	14.88	8600	3.00	6754	184	94	.087
16	4.75	19.00	9100	3.00	7147	152	95	.056
20	4.75	21.24	9100	3.00	7147	136	95.2	.041
24	4.75	23.27	9100	3.00	7147	124	95.4	.031
26	4.75	24.22	9100	2.75	5109	120	95.6	.028
30	4.75	26.02	9100	2.75	5109	111	97.0	.022

MILL C

Yarn No.	16/1 (Knit)	20/1 (Knit)	22/1 (Knit)	30/1 (Knit)	16/1 (Soft)
Creeling	Double	Double	Double	Double	Double
Cotton	1½2"	1½2"	1½2"	1½2"	1½2"
Twist multiple	3.10	3.25	3.25	3.25	2.50
Hank roving	1.30	1.30	1.30	2.00	1.30
Draft	24.6	30.7	33.8	30.0	24.6
Ring diameter	3"	3"	3"	3"	3"
Spindle speed (rpm)	7200	8300	8300	9000	5500
Front roll speed (rpm)	185	182	174	160	175
Doff time	12 hrs.	16 hrs.	18 hrs.	24 hrs.	10 hrs.
Oz. per bobbin	12 oz.	12 oz.	12 oz.	12 oz.	11-12 oz.
Skein break (#/120 yds.)	150	120	106	78	100 approx
C.V.	.53	.75	.81	.65	.53 approx
Traveler speed (ft./min.)	5655	6509	6509	7068	4320
No. of spindles per spinner	14 sides 1680	20 sides 2400	20 sides 2400	26 sides 3120	10 sides 1200
No. of frames per doffer	18	18	18	18	18

THE ABOVE INFORMATION IS FACT . . . SUBMITTED TO US BY MILLS NOW OPERATING GWALTNEY SPINNING FRAMES.

Mills interested in matching these standards should have a Saco-Lowell Sales Engineer prepare a "Forecast of Savings" based on a Gwaltney-Saco-Lowellizing program.

*** NOW OVER 490,000 SPINDLES OF GWALTNEY IN OPERATION.**

Mill Names on Request

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

Reg. U. S. Pat. Office

IMMUNOL . . . . for All Cleaning Jobs

(PROVEN BY 10 YEARS OF USE)

the one SOLVENT that eliminates the hazards of

IMMUNOL is used to advantage in the following process industries:

OPENING	WARPING
CARDING	SLASHING
SPINNING	WEAVING
WINDING	KNITTING
THROWING	DYEING
TWISTING	FINISHING

LESS EXPENSIVE

A gallon of IMMUNOL, prepared to proper proportion and ready to use, costs only 13c. Labor costs entailed in applying IMMUNOL is the lowest possible in that IMMUNOL can be safely and properly used by the unskilled employee.

MORE EFFECTIVE

IMMUNOL has found such wide acceptance in mills throughout the country because of its versatility and effectiveness as a cleaning agent. Metal cleaned with IMMUNOL will not rust or discolor. Dirt, soil, oil, grease, size, and mill film are easily removed from any textile machine or equipment.

VERY EASY TO USE

IMMUNOL dissolves instantly in any kind of water at normal room temperature. It can then be applied cold or hot, by wiping, brushing, or spraying and then allowed to dry or blown dry with air. It is absolutely safe to personnel, equipment, and the plant.

Other Outstanding Features

- ODORLESS
- NON-TOXIC
- SAFE TO SKIN
- PREVENTS RUST
- CLEANS FASTER
- NO RESIDUE
- INEXPENSIVE
- NO LINT ADHERES
- NOT OILY or GREASY
- HIGHLY ENDORSED

Manufacturers of

GLYCOLA • REVERSOL • FIRMTAL
FIBREGARD • ACTIVOL • POTENTOL

Test IMMUNOL at our expense. Write for a free sample today

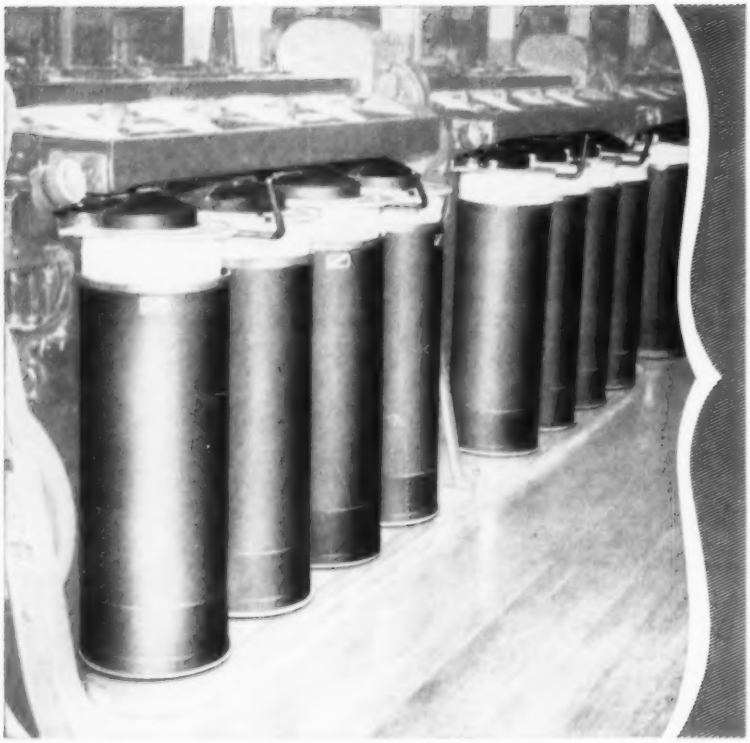
HARRY MILLER CORP. HAMICO 4th & BRISTOL STREETS PHILADELPHIA 40, PA.

Service Representatives In Principal Cities

HARRY MILLER CORP.

Original Products and Processes Since 1936

4th and BRISTOL STREETS, PHILADELPHIA 40, PA.



HOW SOUTHERN STATES COMPLETE COILERS AND CONVERSION UNITS CUT CARD ROOM OPERATING COST

Mill case histories prove over and over that Southern States coiler conversions pay for themselves in less than a year!

Adding up to lower operating costs and savings you can see are larger cans with increased capacity . . . renewed life of old coilers, longer life of new coilers . . . lower maintenance costs . . . smaller parts inventories . . . simplified, more efficient handling . . . plus improved quality.

Recognizing that each mill is faced with different problems, Southern States has produced the most complete line of coiler and coiler conversion units available to the industry. Thus, regardless of sliver handling methods, or condition of existing equipment, Southern States makes it possible for your mill to enjoy all the advantages of larger cans at a price you can afford.

Complete details are in our Bulletin 201, which we'll send on your request. Better still, let our representative show how Southern States conversions can cut your card room costs.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

best publications of its type. As a textile engineer, I find many articles each month which serve as valuable guides in applying new methods and processes."

LEONARD B. KAPLAN
Edgewood, Md.

We Asked for It

Spotting the young lady below in Union Special Machine Co.'s "Needle's Eye," we asked to use her in Shorts & Remnants. Art Feigel (USM-

Co.) writes ". . . I, too, could use the young lady in 'Shorts and Remnants' but I'm afraid you'll have to take her in her nightgown . . ." (Gown by Wolverine Knitting Mills, Bay City, Michigan).

More Ultrasonics

"Will you please send tear sheets on the ultrasonic vibrator for research and application in wet processing (July '55) . . ."

W. W. MACOMSON
J. P. Stevens & Co., Inc.
Wallace, South Carolina

► Inquiry referred to Acoustica Associates, Inc., Glenwood Landing, L.I., N.Y.

"My Private Secretary"

". . . This booklet is very helpful to our supervisors and ourselves in keeping track of manufacturing information."

C. B. HAYES, JR.
Gen. Mgr. Arkwright Mills
Spartanburg, S. C.

"Primer for New Supervisors"

"We have taken your admirable magazine now for many years and have enjoyed and benefited by many

of the articles included. There is a comparatively brief article in the August issue, 'A Primer for New Supervisors,' which I would like our supervisors to have by them constantly; to read not once but often. Is it possible please to have 24 reprints of this article? . . ."

B. MORRIS
Gen. Mgr. Eckersleys
Wigan, Manchester, Eng.

► Others closer home also wanting reprints of "Primer for New Supervisors" include **O. S. Reinold,** Gen. Mgr. National Automotive Fibres Inc. Oakland, Calif., and **T. Mares,** U.S.D.A., New Orleans, La.

Please Correct Your 1956 EP&BG

In case you're puzzled about those initials, they stand for TI's 1956 Equipment Parade & Buyer's Guide which you received in mid-November of last year. For some reason, which we have been unable to determine, the address given in Section 11 for Smith Textile Apron Co., was wrong. This manufacturer of spiked and plain slatted aprons, carding beater lags, waste machine lags, comb blades, lap pins, blade and kirschner beaters, and spiked and plain slats is located on the New Dallas Highway, Gastonia, N. C., and correspondence for them should be addressed accordingly. We hope no one has been inconvenienced by this regrettable mistake.

Jumping To Conclusions

She was only a farmer's daughter
Who went into the mill,
She made a real good spinner
Though they thought it her would kill.

A can of milk she drank each day
Straight from her favourite cow;
And all the time, she was bright and gay
She had gotten the real know how.

A can she brought for her foreman
And said, please now, drink it Ted! !
He sipped, and then he drained the can
For she had given him beer instead.

He looked at her, and said, "My word,
There is no mystery now;
Your Dad surely has the finest herd
And I love your old brown cow."

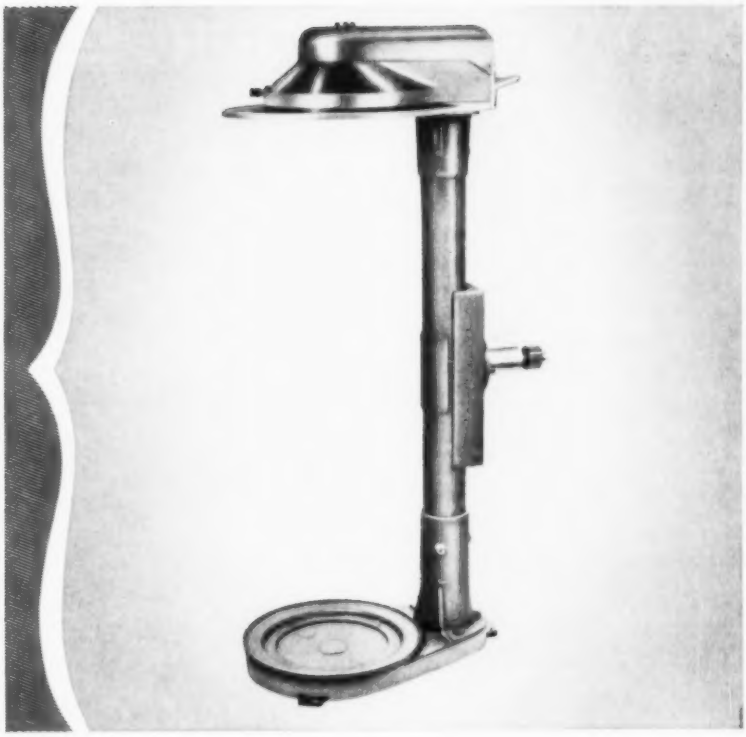
Watson J. Wood
Knitters Ltd.
Lindsay,
Ontario,
Canada

Tufted Textiles for Germany

"We have a request from one of our German connections . . . regarding the experience of manufacturing carpets by the tufting method. He understands this article appeared either in your June or July edition. . ."

E. H. BOYKIN
Patton Bros., Memphis, Tenn.

► A reader in Europe is going into production of rugs and writes he has



SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

Name the features you desire most and you will find them on Southern States' vastly improved coilers. To provide mills with a truly premium-quality coiler, every engineering and design feature wanted by mill men has been included.

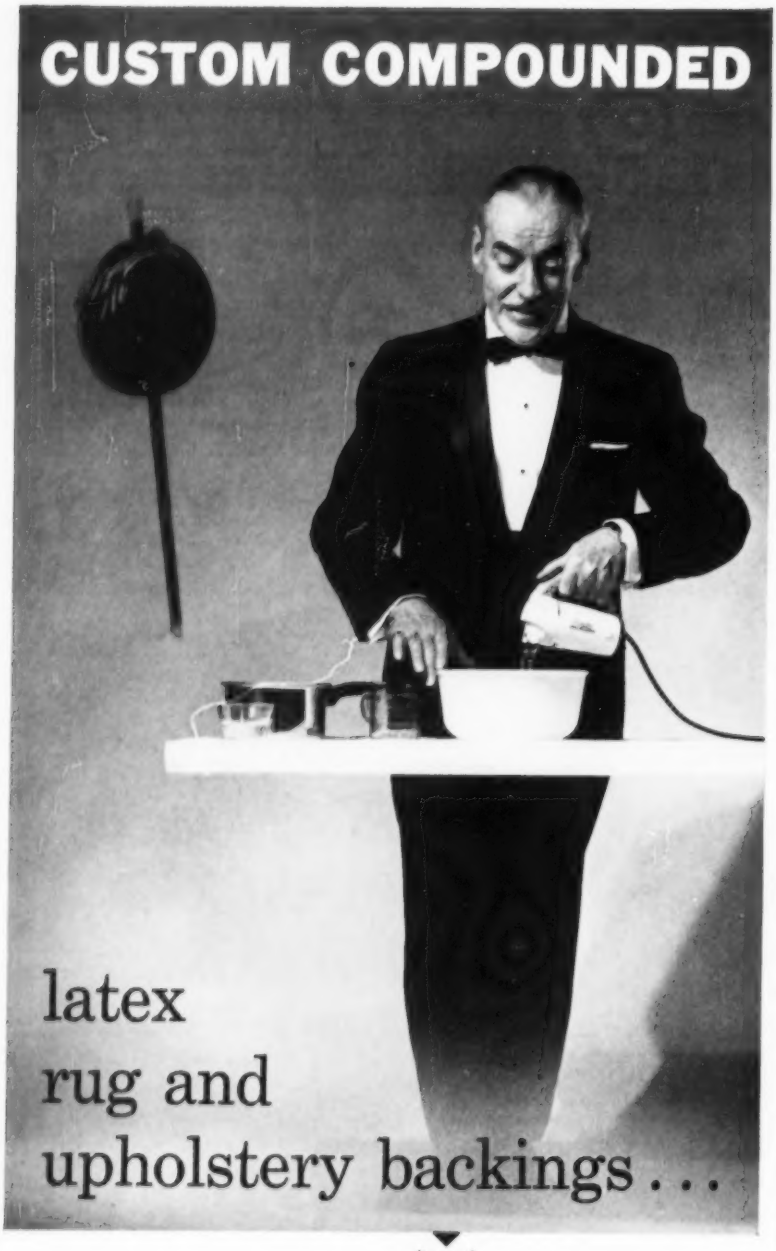
Here are some of them: available for all can sizes . . . ball bearing throughout—head, shaft, and can table . . . cut tooth gears throughout . . . head and base may be rotated . . . strong tubular steel stand . . . precision-ground calender rolls . . . self-aligning pillow blocks on upright and calender roll shafts . . . fully adjustable can table . . . quickly detached coil spring roll-loading device. Others are fully described in our technical bulletin.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

Your mill can profit by this coiler that is quality-built throughout to operate at peak performance, with minimum maintenance, for years.

Get the facts from your Southern States representative or write direct to us for Technical Bulletin 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA



All General Latex natural and synthetic latex compounds are blended to perfection . . . to meet your most discriminating requirements. Write us your requirements.

GENERAL LATEX AND CHEMICAL CORPORATION

666 Main Street, Cambridge 39, Mass.

importers and compounders

General Latex and Chemical Corporation (of Ohio) Ashland, Ohio
General Latex and Chemical Corporation (of Ga.) 1206 Lamar Street, Dalton, Georgia
General Latex & Chemicals (Canada) Ltd. 425 River Street, Verdun, Montreal, Canada
General Latex & Chemicals (Canada) Ltd. Brampton, Ontario, Canada

representatives in principal cities—exclusive agents for sale in U.S.A. of Harrisons & Crosfield Malayan Latex—sales agent in U.S.A. for Goodyear's PLIOLITE Latices

Shorts and Remnants

contacted all advertisers in our June 1956 issue on tufting. He wants to know more on curing and finishing but says "no publicity" (name upon request). **R. S. Fredersen,** C. G. Trading Corp., New York, N. Y., wants extra copy June issue. So does **C. B. Pringle,** Dir., Tufting Machinery Ltd., London, Eng. Look for another big TUFTED TEXTILES Section June 1957.

Wanted

Malcolm K. Breckenridge, Shaffer, Brennan, Margulis Co., St. Louis, Mo., has a client that wants large quantities of "lobster bibs" (restaurant use) made of white denim with lobster imprint in red. **M. Peukert,** 560 W. 163rd St., New York, N. Y., wants black and white goat and kid hairs. **Jose Lois Mena Zumbado,** San Jose, Costa Rica, C.A., wants to sell U.S.A. textiles in Costa Rica.

C. K. Ramer, Carport Corp., Owosso, Mich., presently handling vinyl coated fabrics, wants a cloth account for automotive trade. **James W. Watts,** Route #3, Pontotoc, Miss., wants address of American Bamboo Corp. (Oct. '56), and that is Jamaica, L. I., N. Y. **R. Siebenmann,** 2016 Bachelder St., Brooklyn, wants cloth turning machine as mentioned in Oneida Knitting Mill story (July '56). **A. H. Leavy,** Congress Textile Printers, Hawthorne, N. J., wants machine for tubing 15-denier nylon tricot.

W. A. Hightower, Saluda, S. C., writes for four leaf gauges for setting cards. **Leighton B. Dorey,** Pres. Anchor Dyeing & Finishing Co., Inc., Phila. Pa., wants information on Askania Regulator Co. edge position controls. **Morris Kaplan,** Treas. Mercer Paper Tube Co., Trenton, N. J., wants more data on Lunkenheimer bottle oilers (Oct. '56), etc., etc. If you don't see what you want in TI, write and ask.

For further information use Handy Return Card, Page 187

maximum light fastness in heavy shades
(excellent wet fastness, too)

NATIONAL CARBANTHRENE® DIRECT BLACK 3G DOUBLE PASTE

Our shade card for this National Vat is studded with top ratings on almost every AATCC test (Exception: Chlorine bleaching turns it somewhat redder). It produces pleasing shades from the green grey shown here (2.5% on cotton) to deep greenish-black in heavy dyeings.

This nondrying paste may be applied by the various pigment impregnation methods and the reduced bath method in all types of dyeing equipment. It is also suitable for printing and can be used for resin-finished goods.

Get in touch with our nearest office for a sample, shade card (Bulletin #442), price and delivery on National Carbanthrene Direct Black 3G Double Paste.

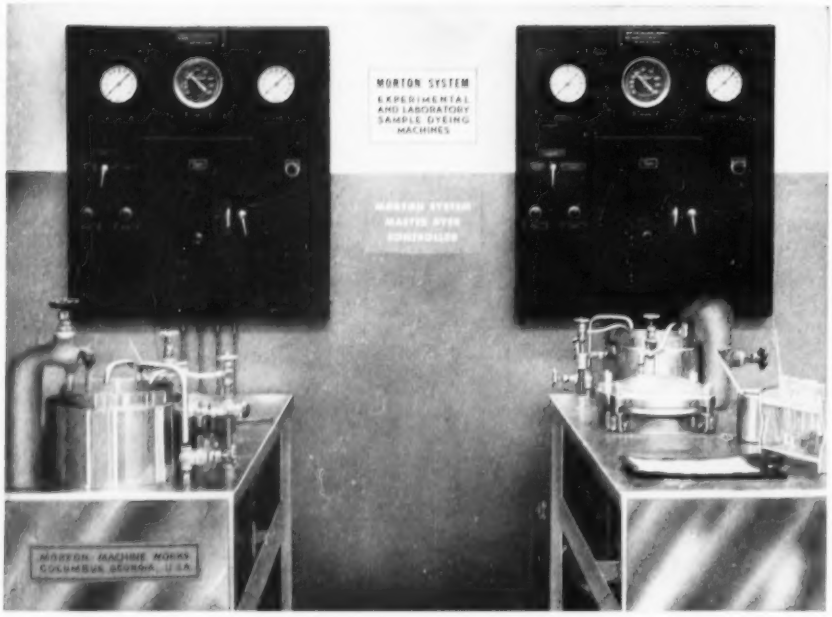
NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Charlotte Chicago San Francisco Atlanta
Portland, Ore. Greensboro Philadelphia Richmond Cleveland
Los Angeles Columbus, Ga. New Orleans Chattanooga Toronto

Allied Chemical

MORTON SYSTEM

EXPERIMENTAL AND LABORATORY SAMPLE DYEING MACHINE



This sample unit is designed to aid Dyer in determining the formulae to be used in the production machines. This is a splendid machine for laboratory work and it is for use with all types of packaged yarn wound on springs or tubes. Natural or synthetic stock or yarn may be processed in this machine at conventional pressures and temperatures; or elevated temperatures and at high pressures. Machine mounted on a stainless steel laboratory table.

The Morton System Laboratory Sample Dyeing Machines have all parts contacting the liquids in the machine constructed of stainless steel or any metal specified. The entire machine is similar to the production units and has all the features such as reversible dye liquor flow, controlled by Morton Ball Bearing Reverse Valve.

- ★ —Machine may be heated by steam or electricity.
- ★ —For use at temperatures up to 325° F.
- ★ —Continuous wash.
- ★ —Heavy Duty Engineering Principles.

Manufactured by:

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:

BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES

CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

HUNTER FLEXREEL WASHER

WITH UNIQUE CLOTH TENSION CONTROL

PUTS PROFITS IN COTTON KNIT GOODS

WASHING AT... *Carter's*

HUNTER FLEXREEL WASHER AT CARTER

Washing cotton knit goods under exacting test controls Carter's shows thousands of dollars in production savings at its Barnesville, Ga. underwear and sleepwear plant. Looking at the long-run manufacturing picture, this is what Carter gains: speeds up to 200 yards a minute . . . reduction in kier time . . . elimination of extra kiers. And, because it is a Hunter machine, reduction of down time to an absolute minimum.

In addition to the Hunter Flexreel Washer, like the one at The William Carter Co., Hunter makes a Conereel Washer with air operated guide pins which permits tension-free processing of a wide variety of fabrics such as cotton knit goods, lawns and heavy bark cloths. Fabrics are handled at speeds up to *300 yards a minute* . . . preserving full fabric strength without surging or seam breakage.

PUT *PROFITS* IN YOUR WASHING OPERATION WITH THE HUNTER FLEXREEL WASHER

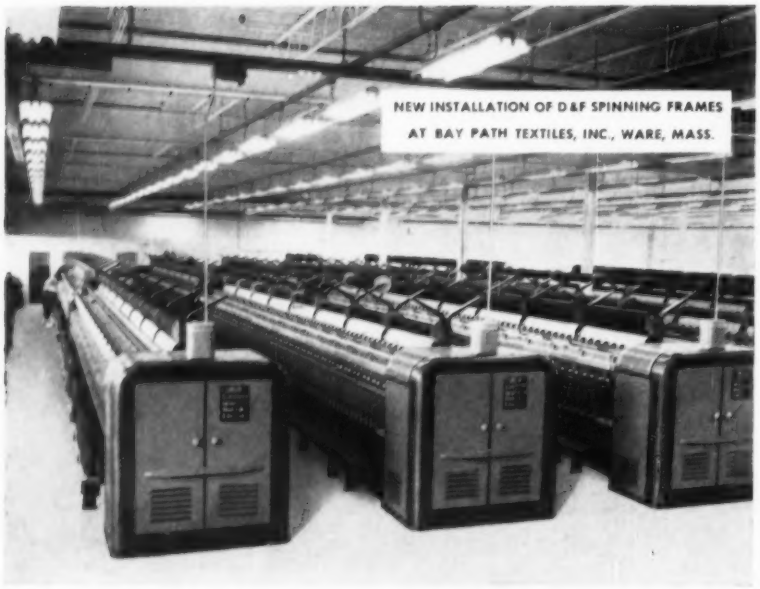
JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

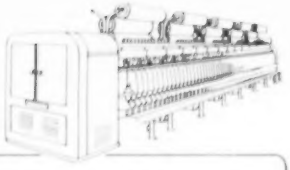
plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair . . . rapid parts delivery



Compare your wool spinning records with these

"coordinated production" figures



ON DAVIS & FURBER SPINNING FRAMES LIKE THESE YOU CAN ACHIEVE:

	Carpet, Felts & Blankets	Apparel & Men's Wear
Front Roll Speeds RPM	150 to 200	75 to 150
Spindle Speeds RPM	2400 to 4000	4000 to 6200

Speed variations according to stock specifications

Profitable mill operation requires thorough, expert planning of both the necessary equipment and the method of operation. Here are positive ways Davis & Furber can help you obtain *such* "Coordinated Production" efficiency — vital in today's competitive market.

A Davis & Furber Technical Survey will include:

Recommendations for —

- ★ *An over-all production improvement plan.*
- ★ *Equipment additions or changes to match your stock and yarn specifications, together with the investment required.*
- ★ *Establishment of a preventive maintenance and operating program, to increase efficiency.*

Plus actual:

- ★ *Set up of equipment "in-the-mill."*
- ★ *Follow-up to assure peak performance and production.*

The benefits of Davis & Furber experience are yours for the asking. Contact us now at North Andover, Mass. or Charlotte, N. C. Ask for the D&F News to help with your planning.

DAVIS & FURBER

MACHINE COMPANY

TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS

North Andover, Mass.
Charlotte, North Carolina

AD 11.3

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES SUPPLIES SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Personal NOTES

ABOUT MEN YOU KNOW

Bradford (R. I.) Dyeing Association has promoted to the position of vice-president in charge of sales, **Ernest J. Chornyei,** from that of plant superintendent. **Walter R. Howell, Sr.,** has retired as executive vice-president, and **Robert E. O'Brien** has been elected to the board and appointed sales manager.

James G. Clifford has joined William Heller, Inc., New York, as manager of the company's knitting mills, Woonsocket, R. I., succeeding **George Elms** who has joined the research and development division of Chemstrand Corp. Before joining the Heller firm, Mr. Clifford was general superintendent and designer for Carolina Fabrics and knitting superintendent of Manchester Knitted Fashions.

Recently retired from West Point (Ga.) Manufacturing Co.'s Lanett, Ala., mill were: **Malvern C. Morgan, Sr.,** overseer of the cloth room; **C. S. Kirby,** office manager; and **Jesse J. Mehaffey,** master mechanic.

Henry Flesh has been promoted from vice-president to president of Atlas Underwear Corp., Piqua, Ohio.

Former production foreman of Dominion Rubber Company's textile plant in Kitchener, Ontario, **Frank Heaton** now heads the product development department.

Lawrence Knowles, formerly foreman of carding at L. Turnbull's Ltd., Galt, Ont., now holds a similar position at Newland & Co. Ltd., in Galt.

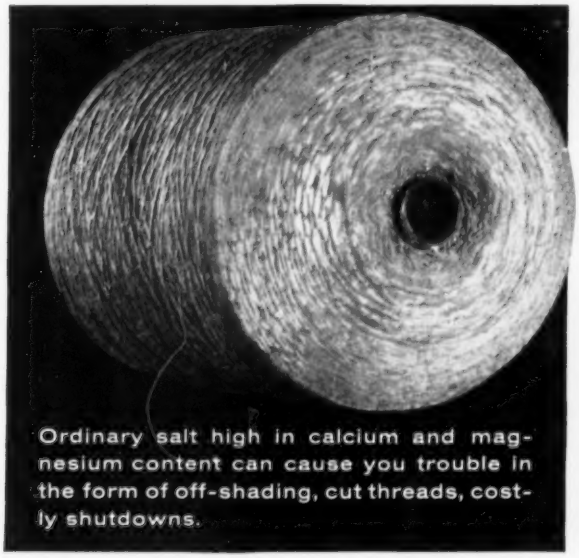
J. O. Lindsay, formerly assistant general manager of Pacific Mills, has been named vice-president and general manager of Lyman Printing and Finishing Co., Spartanburg, S. C., as successor to J. E. (Jack) Crosland, who recently resigned. **Jack L. Green** has been promoted from general superintendent to assistant general manager; **Fred H. Parris** from assistant general superintendent to general superintendent, and **E. S. Hensley** from master mechanic to

(Continued on page 24)

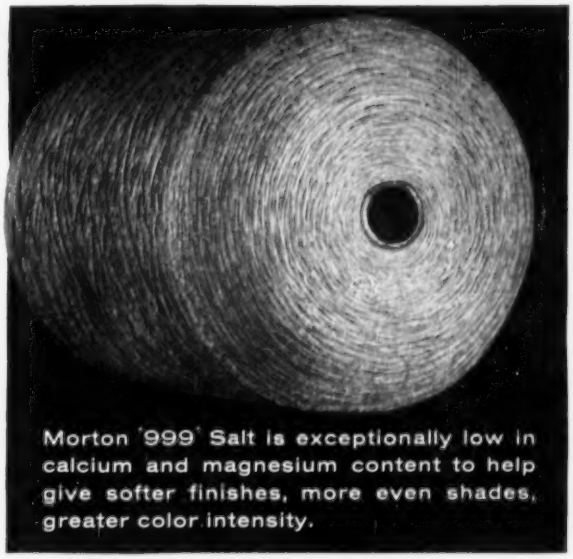
You don't add objectionable calcium when you use

MORTON '999' SALT

Chemical Grade



Ordinary salt high in calcium and magnesium content can cause you trouble in the form of off-shading, cut threads, costly shutdowns.



Morton '999' Salt is exceptionally low in calcium and magnesium content to help give softer finishes, more even shades, greater color intensity.

Morton '999' is a low-cost, high purity evaporated salt, free of objectionable calcium and magnesium compounds. '999' is 99.9% clean, pure sodium chloride for use whenever low calcium salt is needed.

As the chart, below, shows, for direct salting you may reduce the total calcium content by as much as 1950 parts per million by using '999' instead of common grades of ordinary salt. Where you are investing time and money in turning out a quality product, Morton '999' Salt is low-cost insurance against dyeing failures caused by excessive calcium in salt.

Available in 100-lb. bags or bulk, '999' is specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes.

MORTON SALT COMPANY
Industrial Division, Dept. TI-1-57
120 South LaSalle Street
Chicago 3, Illinois

___ Please send me more information about Morton '999' Salt.

___ I would also like to know how much I can reduce calcium and magnesium content by using Morton '999' Salt. Please have a Morton Brine Engineer call on me to explain the benefits of using '999' Salt.

Name_____

Title_____

Company_____

Street Address_____

City_____ Zone_____ State_____

Ordinary salt averages 125-2000 PPM

PPM Calcium and Magnesium

Morton '999' Salt (Chemical Grade) is guaranteed to contain less than 50 PPM

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. TI-1-57, 120 So. La Salle Street, Chicago 3, Illinois

Motor alley in Spinning Room showing installation of Bahnson Central Heat Removal System.

Why our new Central Heat Removal System **takes out more unwanted spinning room heat** than other designs

Based on the net heat added to a spinning room in the motor alley and by vacuum collection equipment, comparative field tests conducted with mill engineers show that the Bahnson Central Heat Removal System takes out *approximately twice the unwanted heat* removed by other designs.

This is possible because our Central Heat Removal System simultaneously:

- Cools the motor alley by efficiently removing the heat generated by the frame motors.
- Removes the heat from the vacuum collection units.

Result: It provides more uniform conditions in the spinning room. It also retains the flexibility and convenience of the unit system.

If you are interested in performance and technical data on our Central Heat Removal System, or in having our representative call to discuss your heat problem, write directly to me at the Bahnson Company or simply mail the coupon below.

Agnew Bahnson Jr.

President
The Bahnson Company

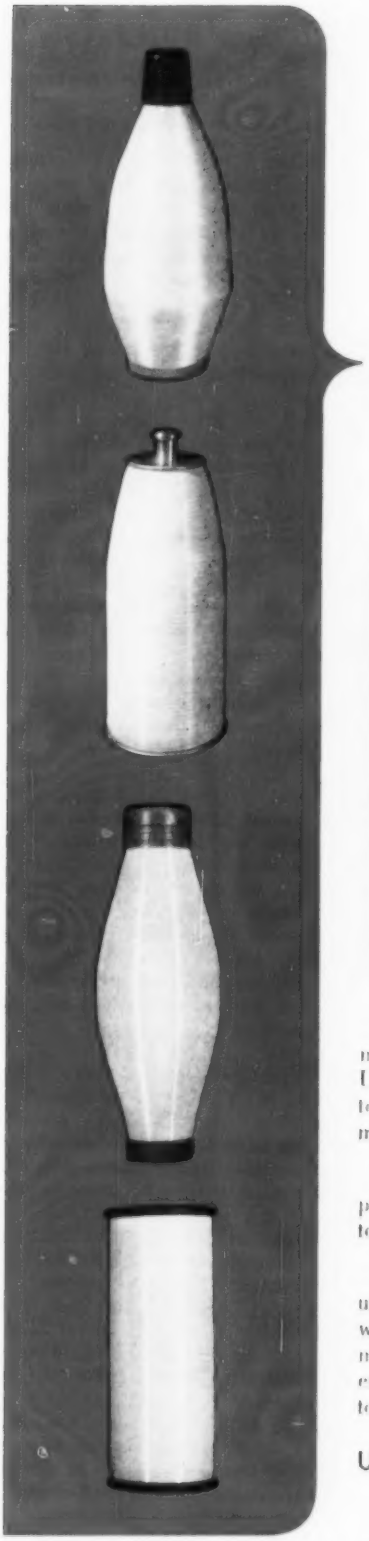
Agnew H. Bahnson, Jr.
Dept. R
The Bahnson Company
Winston-Salem, N. C.

We are interested in ☐ data on the Central Heat Removal System ☐ having your representative call to discuss our heat problems.

Name _____
Company _____
Position _____
Address _____
City _____ Zone ____ State _____

Bahnson
COMPANY
WINSTON-SALEM, N. C.

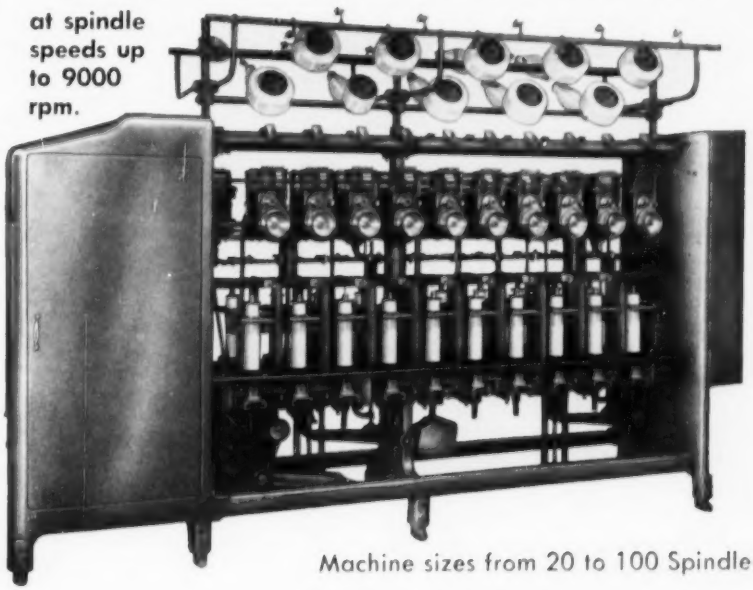
AIR CONDITIONING
VACUUM COLLECTION
CLEANING
CREELS



you can make all four of these packages on the

NEW U.S. ACME HIGH SPEED DOUBLER-TWISTER

at spindle speeds up to 9000 rpm.



Machine sizes from 20 to 100 Spindles

Yes, you get real package versatility with this newest U. S. ACME—one machine that will produce the several package variations shown here! The new U. S. ACME HIGH SPEED DOUBLER-TWISTER is built on a new unit arrangement to simplify package changes, provide greater stability, higher efficiency, minimum maintenance and lower operating costs.

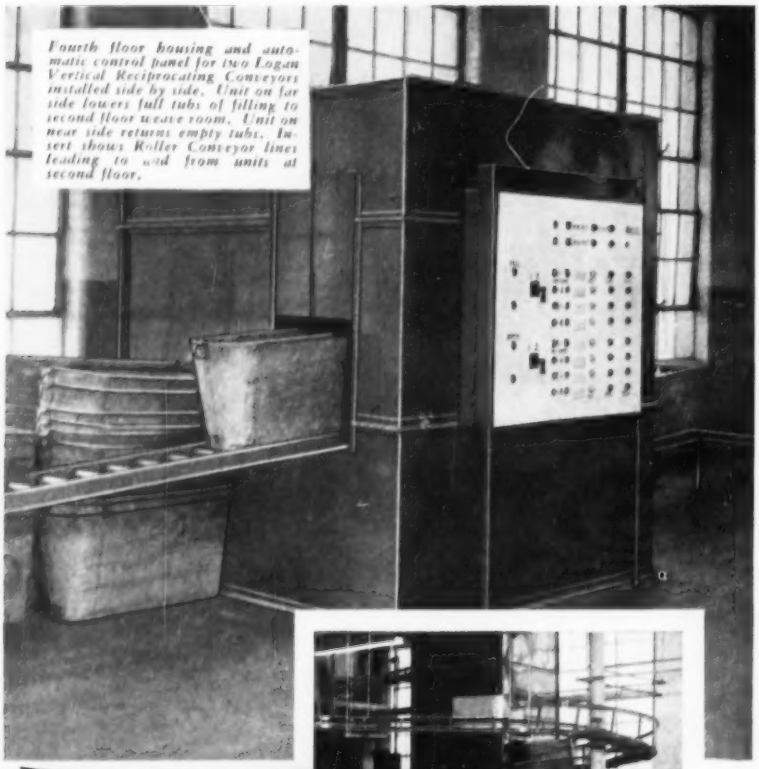
Speed-wise, this new DOUBLER-TWISTER will give you three times the previous production of any primary twist on zero yarns! It's designed and engineered to handle yarns as low as half-turn-per-inch at spindle speeds up to 9000 inches.

The machine features a simplified new feed roll clutch device combined in one unit with dual stop motion controls, drop wires and thread guides. It is equipped with a lint-protected transfer oiling system directly above each feed roll unit. The machine is designed to accommodate any known supply package (for either over-end or rotating delivery) and to produce any of the finished packages shown, up to ten-inch traverse. Write or phone for complete information . . .

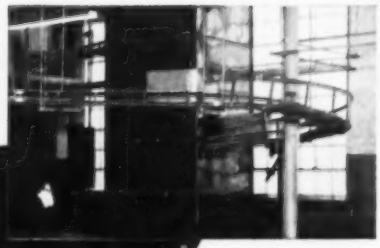
U. S. TEXTILE MACHINE CO. • Scranton 8, Pa., U. S. A.

U. S. TEXTILE

designers and manufacturers of
U. S. ACME MODERN THROWING EQUIPMENT



Fourth floor housing and automatic control panel for two Logan Vertical Reciprocating Conveyors installed side by side. Unit on far side lowers full tubs of filling to second floor weave room. Unit on near side returns empty tubs. Insert shows Roller Conveyor lines leading to and from units at second floor.



The LEADERS use Logan

Leadership, in the industrial world, is closely allied to the use of mass production equipment such as Logan Conveyors. Large plant or small, the "principles" of mass production can be utilized to advantage. Conserving manpower, saving priceless time, increasing plant capacity, maintaining satisfactory working conditions are some of the contributions which Logan Conveyors make to the mass production process. Let Logan work for you, too. Write for nearest engineer or for further information.

LOGAN CO., 206 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

Personal NOTES
ABOUT MEN YOU KNOW

(Continued from page 20)

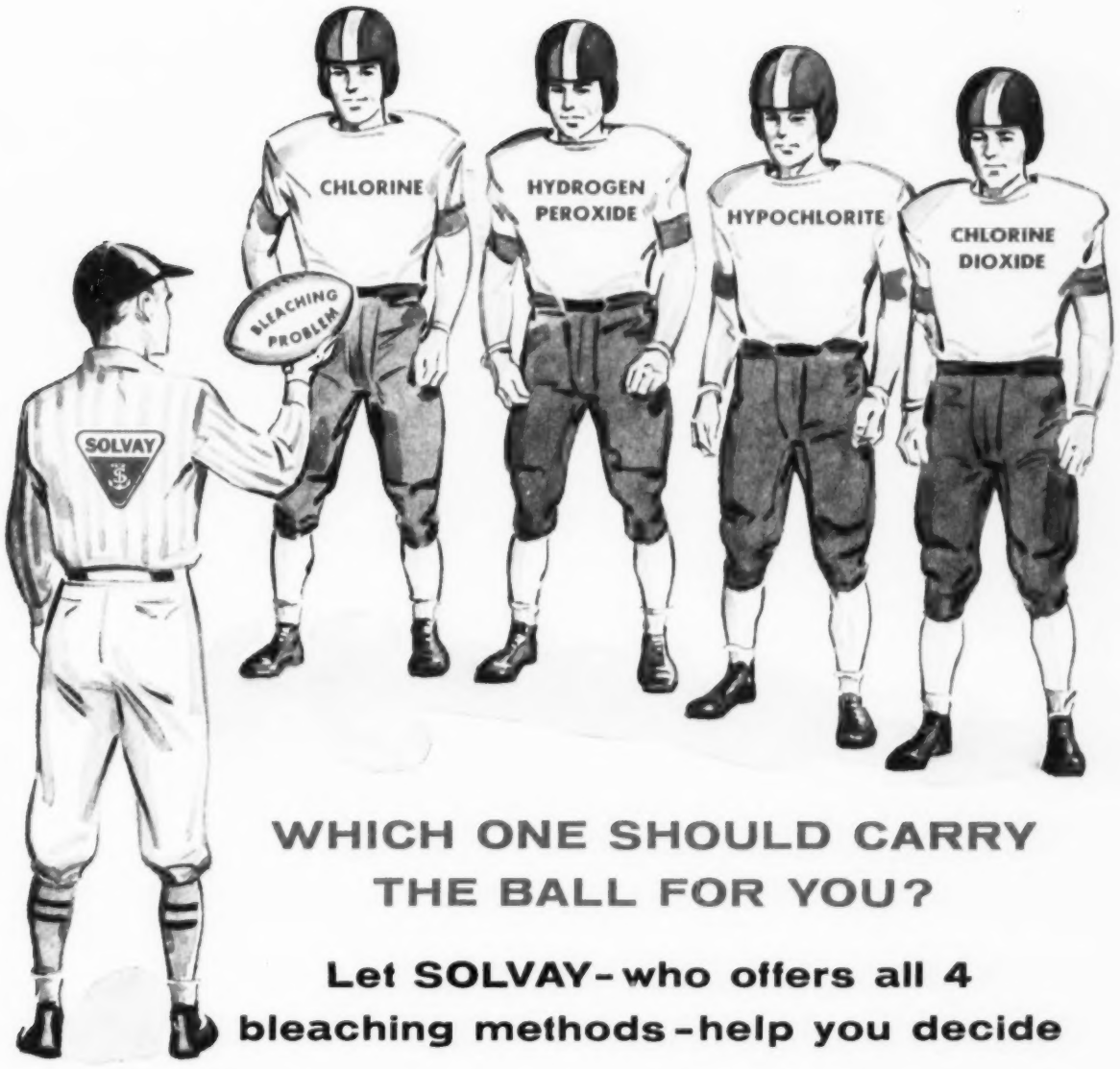
plant engineer. **Sam Lynn** steps up from shop foreman to master mechanic. In a liaison capacity between the Lyman plant and Rock Hill (S. C.) Printing & Finishing Co., **Ned Bobo** has been named staff assistant to William H. Grier, executive vice-president of the two firms. He will work with Ben May of the Rock Hill plant.

Four promotions at the Rock Hill (S. C.) Printing and Finishing Co. include the elevation of **Harold Connelly** from divisional superintendent to assistant general superintendent; **Dave Vipperman** from divisional superintendent to superintendent of the Grier division; **Herman Weisz** to divisional superintendent in charge of the color, soaper and agers department; and **Howard J. Gordon** to divisional superintendent of economy, safety, laundry, plisse, claims and allowances.

Abbot Worsted Co., Seneca, S. C., has named **Edward P. Krebs** general manager of all operations, with headquarters in New York City, succeeding E. M. Abbot. **Guy Branch,** previously head of research and development at the now closed Forge Valley, Mass., mill, has been appointed branch agent at Seneca, replacing Herman A. Sayles, who has resigned.

At the Amerotron Corp., New York, N. Y., **Edmon G. Luke,** an executive vice-president, succeeds **Robert L. Huffines** who has resigned as president. Mr. Huffines will continue as a director of Textron, Inc., the firm's parent organization, and will perform certain staff functions and assignments on a part-time basis for Textron's various divisions, with offices at Textron's New York quarters. * * * New assistant to Joseph Merton, director of grey goods quality control, is **Merrill Little.**

A. & M. Karagheusian, Inc., New York, N. Y., announces the appointment of **George E. Paules** as director of manufacturing and of **Richard M. Dorian** as director of engineering and research. Both men will make their headquarters in the company's executive office in New York. Replacing Mr. Paules as Albany, Ga., plant manager is **Arthur B. Lauman. Joseph E. McAdory** has been ap-



WHICH ONE SHOULD CARRY THE BALL FOR YOU?

Let SOLVAY-who offers all 4 bleaching methods-help you decide

Now with the addition of Hydrogen Peroxide to its line, SOLVAY is in a position to offer you unbiased recommendations for the method or methods of bleaching which would be best suited to your operation.

But objective counsel is only one reason for seeing SOLVAY. Besides supplying products that have set the industry's quality standards for over 75 years, SOLVAY helps you get the most out of these products . . . through authoritative literature, practical application aid by field technicians and the research facilities of the world's largest alkali laboratories. All are at your service—at no extra cost—through SOLVAY Technical Service.

SOLVAY®

Aluminum Chloride • Vinyl Chloride • Calcium Chloride
Potassium Carbonate • Sodium Nitrite • Caustic Potash
Snowflake® Crystals • Sodium Bicarbonate • Caustic Soda
Ammonium Chloride • Methylene Chloride • Methyl Chloride
Ammonium Bicarbonate • Ortho-dichlorobenzene • Chloroform
Soda Ash • Monochlorobenzene • Carbon Tetrachloride • Para-dichlorobenzene
Chlorine • Cleaning Compounds • Hydrogen Peroxide

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Gentlemen: Please send me without cost* literature on:
☐ Chlorine ☐ Hydrogen Peroxide ☐ Hypochlorite
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BQ-1

*In Western Hemisphere Countries Only

SODIUM HYDROSULFITE

TC HYDRO

TENNESSEE CORPORATION

CONCENTRATED

As miners of Sulfur Bearing Ores, we are now producing another Basic Sulfur Textile Chemical, **TC HYDRO** for the Southern Textile Industry.

SPEEDY DELIVERY SERVICE

Our location in the heart of the Southern textile industry, permits us to render overnight truckload service to most Southern textile plants. Small lot shipments are available from centrally located warehouses.

DEPENDABLE SUPPLY

Long a trusted source of Sulfuric Acid, Sulfur Dioxide, Organic Sulfonates and other textile chemicals, we are utilizing our know-how and basic position in Sulfur Chemistry to produce another quality product for the textile industry.

HIGHEST QUALITY

TC HYDRO is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust-free, assuring highest stability and uniformity.

Phone, wire or write for literature and test samples if desired.

TC TENNESSEE CORPORATION

TENNESSEE TC CORPORATION

617-629 Grant Building, Atlanta, Ga.

Personal NOTES ABOUT MEN YOU KNOW

pointed administrative assistant to the manager at Albany. Mr. Dorian was formerly plant manager at the spinning division in Roselle Park, N. J., where **H. Richard Carlson** continues as assistant plant manager.

Burlington Industries, Inc., announces that **Carl E. Annas** will be transferred from New York to become plant manager of Mooresville (N. C.) Mills, succeeding **W. Basil Hill** who will fill another post in the Burlington Industries chain. **L. K. Fitzgerald,** who has been with the Mooresville Mills on temporary assignment, is scheduled to return to Greensboro, N. C. **William H. Spencer** continues as superintendent at the Cascade rayon plant in Mooresville. **Arthur Burnet,** division manager of spinning, is now over-all head of both Burlington plants at Mooresville.

Recently elevated from assistant vice-president to vice-president of

Mr. Thatcher

Standard-Coosa-Thatcher Co., Chattanooga, Tenn., was **R. C. Thatcher, Jr.**

At Aragon (Ga.) Mills, a unit of United Merchants and Manufacturers, Inc., **Walter J. Keeter, Jr.,** formerly with Burlington Industries, Gastonia, N. C., has assumed the duties of general overseer of carding and padding department; **Paul A. Hopkins** has been promoted from head laboratory technician to shift overseer of spinning; **Willie Lee Adams,** previously with Anchor Rome (Ga.) Mills, Inc., has been named shift overseer of preparation; and **Oliver L. Mason, Sr.,** formerly with Burlington Mills in Forsyth and Shannon, Ga., has become shift overseer of carding.

At Callaway Mills Co., LaGrange, Ga., **Ajalon A. Tillery,** formerly sales assistant of Elmrose division, is now plant engineer at Unity. At the Valway plant, **Eugene Langford** has

(Continued on page 34)

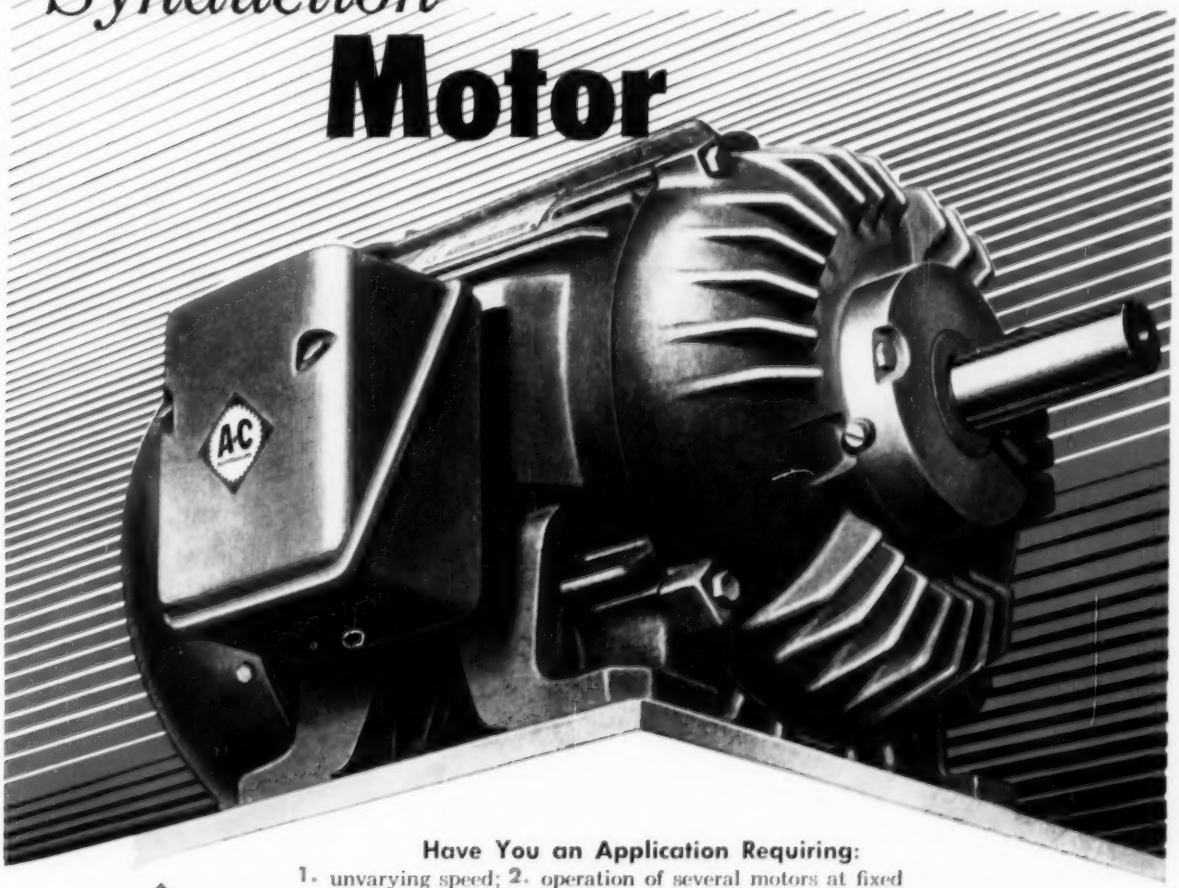
NOW dependable constant speed at less cost

Here's a motor with all the constant speed benefits of synchronous design at initial low cost — with the dependability of an induction motor. It's the NEW *SYNDUCTION* motor, built specially for applications from ¼ to 40 hp.

DEPENDABLE — Now constant speed, regardless of load or voltage changes, is sure . . . depends only on frequency. *Synduction* motor's simple die-cast rotor has no brushes, collector rings, nor insulated rotor windings.

LOW COST—Simple across-the-line control is all that's needed. Further, design permits use of frames smaller than usual reluctance-type motors. Purchase price is well below that of ordinary reluctance-type motors.

New *Synduction* Motor



Have You an Application Requiring:

1. unvarying speed; 2. operation of several motors at fixed speed ratios; 3. adjustable speed with minimum variation at any speed setting? If so, Allis-Chalmers invites your inquiry. Contact your nearby A-C office, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin, for Bulletin 51B8440.

Synduction is an Allis-Chalmers trademark.

A-C ALLIS-CHALMERS

A-5113

ALLIS-CHALMERS

If it's made of paper-

SONOCO

HAS THE ANSWER

because . . .

SONOCO is constantly striving to improve present products and conducts a continuing program of research and development to meet the needs of an ever-changing textile industry.

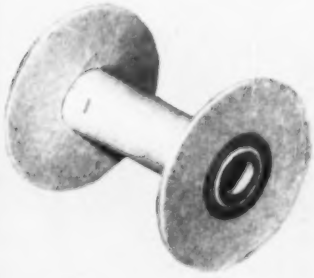
SONOCO paper products have become "standard of the world" wherever textiles are made . . . a "plus value" advantage which has resulted in industry-wide benefits since 1899.

TUBES

Spiral, convolute, parallel or drawn construction from ⅛" to 48" I.D. in any practical length and wall thickness — for every textile need! Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed, with crimped or burnished ends.

CONES

Available with various surfaces, inside and outside printing, notches, scores, perforations and in many nose and tip designs. Lacquer tipping, dyed base and tip, and striped base can be furnished for yarn identification.



SPOOLS

A complete variety of standard sizes, or made to your order. Available with plain, printed and treated heads. Also standard and special tapered base single head thread spools in fibre and plastic.

Consult an experienced SONOCO sales engineer or write us direct!

SONOCO PRODUCTS COMPANY

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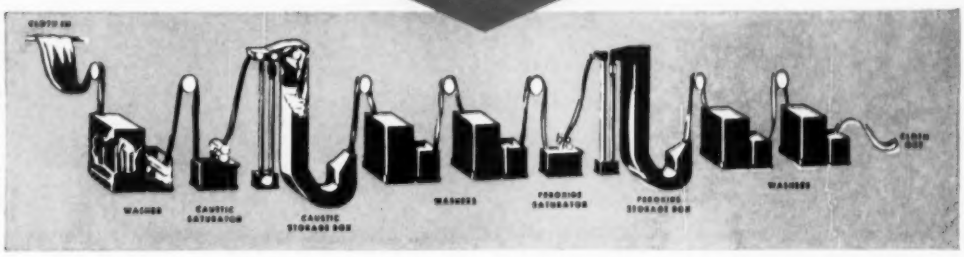
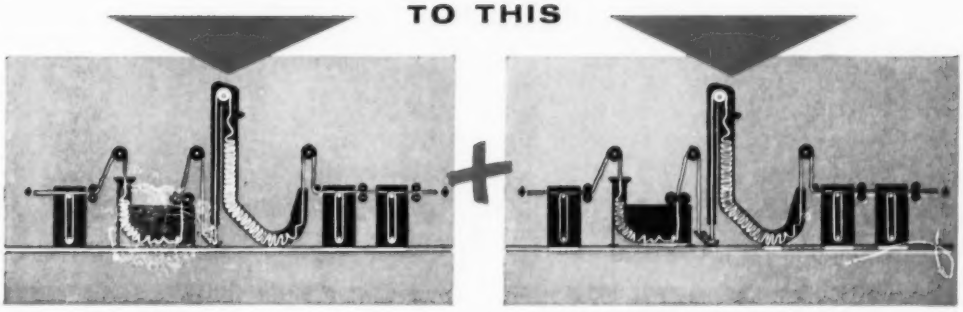
DEPENDABLE SOURCE OF SUPPLY

New "SOLO-MATIC" Bleaching Program gives you doubled production

WHEN YOU CONVERT THIS



TO THIS



. . . or the SAME PRODUCTION with HALF THE EQUIPMENT

Whether you plan a new bleachery . . . plan increased production with present equipment . . . have a kier, jig or two-pass, single-stage system . . . the "Solo-Matic" Bleaching Program affords unparalleled advantages.

Du Pont's unique "Solo-Matic" Program comprises:

1. A single-stage continuous bleaching system that equals the efficiency of multi-stage systems . . . yet requires 50% less floor space and equipment . . . and reduces costs up to 20%!

2. New simplified J-Box that operates at higher temperatures for more effective bleaching . . . reduces wear, tear and distortion on the goods being processed.

3. Du Pont technical service . . . includes a confidential survey of your plant by qualified bleaching consultants. Impartial recommendations are made, based on their findings, with suggestions for adapting the "Solo-Matic" Program to your specific needs.

Du Pont's "Executive Summary" tells you exactly how the "Solo-Matic" Program can step up your production . . . cut costs. Fill out the coupon below and your Du Pont representative will be glad to present this important "Summary" to you.

DU PONT

PEROXIDES

"ALBONE" 50
50% hydrogen peroxide

"ALBONE" 35
35% hydrogen peroxide

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.),
Electrochemicals Department
Wilmington 98, Delaware

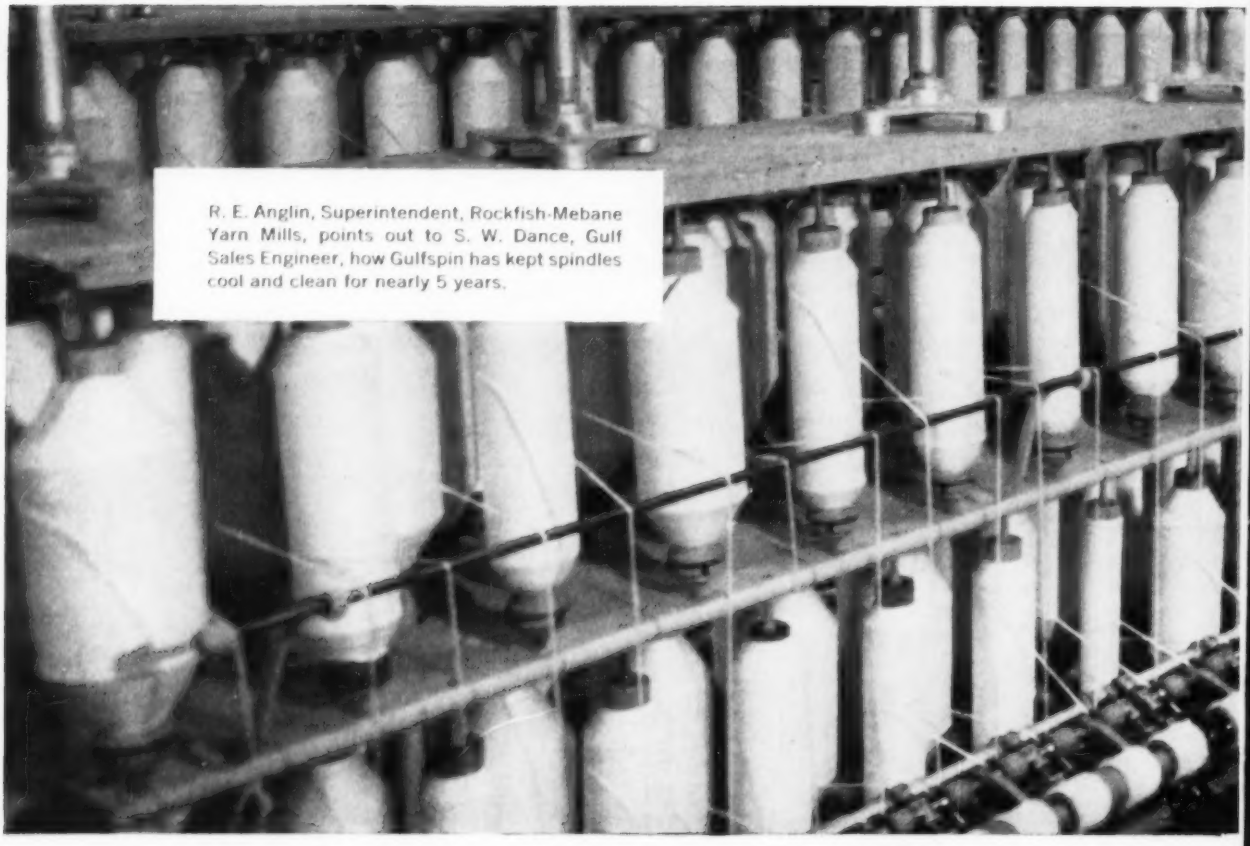
Yes, I would like to learn more about the "Solo-Matic" Program. Please have your representative call with full information.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone_____ State_____



R. E. Anglin, Superintendent, Rockfish-Mebane Yarn Mills, points out to S. W. Dance, Gulf Sales Engineer, how Gulfspin has kept spindles cool and clean for nearly 5 years.

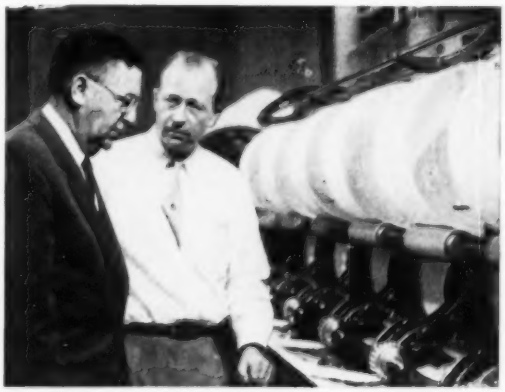
Rockfish-Mebane Yarn Mills cut

Rockfish-Mebane Yarn Mills have used Gulfspin for nearly 5 years to keep spindles performing efficiently. Gulfspin offers immediate savings in 3 different ways: cuts spindle cleaning costs; conserves power, and reduces maintenance costs.

Gulfspin minimizes the formation of sludge, gum and resin that make spindles stick. With Gulfspin, spindles stay clean. You save money on cleaning costs.

Gulfspin viscosity stays the same over long periods of time—8 years in one recently checked mill! Because viscosity doesn't increase, you drive your spindles without wasting power. This means substantial savings in power costs.

Gulfspin also prevents rust, and has exceptionally high load-carrying ability. It



Gulf Harmony Oil is highly resistant to oxidation, lasts indefinitely. It is the oil used to lubricate gears and bearings on this Saco-Lowell Comber.

costs 3 ways with GULFSPIN

provides better protection against excessive wear. By using Gulfspin, you cut costs straight down the line.

Another great oil developed by Gulf and widely used at Rockfish-Mebane is Gulf Harmony. Gulf Harmony provides a tough lubricating film, resists oxidation, leaves no harmful deposits. Available in a wide range of viscosities.

For further information on either Gulfspin, Gulf Harmony Oil—or both—contact a Gulf Sales Engineer at your nearest Gulf office.

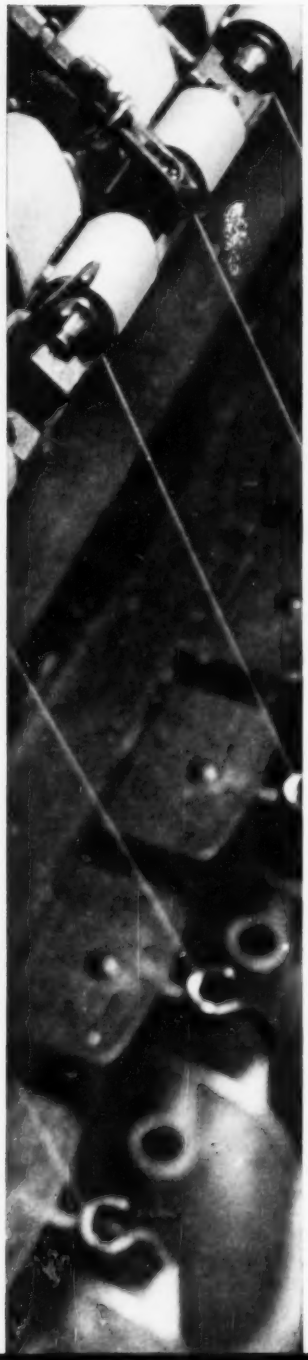
GULF OIL CORPORATION
GULF REFINING COMPANY
1822 Gulf Building
Pittsburgh 30, Pennsylvania

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

Why new Dayco AP 664 Aprons improve yarn uniformity

. . . give trouble-free drafting



Smoother operation is the reason new Dayco AP 664 Aprons draft more uniform yarn, either natural or synthetic. Newly developed, highly flexible compounds eliminate drag around the nose bar, even on the latest super-draft systems.

Semi-gloss pink inner surface gives far lower coefficient of friction. This reduces chatter — indication of jerky, uneven motion around the nose bar. Non-stretch, pliable cord body assures maintenance of uniform apron tension for surer drafting control.

All through the long life of the new Dayco Apron, the compounds in the light blue drafting surface maintain just the right coefficient of friction for improved fiber alignment. Special ingredients prevent lint from coating the surface, therefore the drafting surface always remains the same.

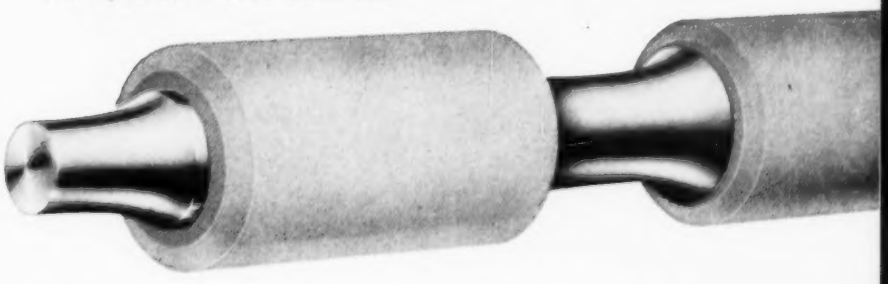
Compounded of materials which stubbornly resist chemicals or oils, Daycos instantly resume quality drafting after shutdowns. They are not affected by heat or humidity, nor will they take a permanent set. Flipped and broken aprons are a thing of the past. Dayco Aprons are available for both single and double apron systems.

Your Dayco Representative will be in soon to give you full information on how new Dayco AP 664 Aprons will improve the quality of every yarn. Or write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.

For even greater drafting control—

New Lap-resistant Dayco EW 661 Cots offer these advantages:

- Stay dry and solid despite heat and humidity
- Dissipate static • Resist all known oils



© D.R. 1957

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

C. Russell Gill, B.S. Worcester Polytechnic Institute '31; Chemist and overseer Finishing Plant to 1934; Chemist and Technical Service Repr., Starch company, 1934-1937; Vice-President and Sales Manager, Southern Sizing Company, 1937, President, 1946.

BUT HE WORKS FOR YOU!

If you have a sizing problem in your mill, the logical thing to do is to get a sizing expert to solve it for you.

Put in a collect call to Southern Sizing Company or contact one of our representatives today! We have six men on our payroll whose job it is to help you make your mill run better. All are experienced engineers and all know weaving and slashing inside and out. One or more of these men is located near you.

We're the first to admit they aren't the prettiest guys in the business but we know they're the best when it comes to solving your sizing problems. Superior service and superior size are our two stocks-in-trade.

BOB JIMMIE ROBERT BERT WALTON

SSC Sizing and Service Salesmen left to right, Robert E. DeLapp, Jr., Jimmie D. Walker, Robert V. May, B. G. Stumberg, Jr., Walton Simmons.

SOUTHERN SIZING COMPANY

SUPERIOR SIZE, SUPERIOR SERVICE

East Point, Georgia

PHONE POPLAR 1-8871

SSC

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 26)

been promoted from second hand in spinning to overseer of twisting and winding; **W. B. "Bill" McWhorter** from second hand in designing and development to supervisor of product development; and **Reece S. Neal** from second hand in finishing to overseer of finishing.

Frank Kitner, formerly general foreman of the finishing department of C. H. Masland & Sons, Carlisle, Pa., is now chief inspector of finished goods. **Howard Weast** has been made general foreman of the finishing department, assisted by **Alfred Noggle,** foreman of the finishing department. **John Stouffer** is foreman of the auto mat department which recently became an independent unit.

At a recent meeting of the Midwest Section of the American Association of Textile Chemists and Colorists, **Samuel M. Littlejohn,** Munsingwear, Inc., Minneapolis, Minn., was elected chairman, succeeding Arthur I. Hultberg, Bear Brand Hosiery, Kankakee, Ill. Chosen as vice-chairman of the section was **Jack G. Kelley,** E. I. du Pont de Nemours & Co., Chicago. **Joseph H. Jones,** Phoenix Dye Works, Chicago, was named councilor to replace L. B. MacFarland, American Aniline Products, Inc., Chicago.

The Carded Yarn Association, Inc., has named as its new president **M. Y. Cooper,** treasurer and vice-president of the Harriet and Henderson (N. C.) Cotton Mills, succeeding J. G. H. Morris of Adelaide Mills, Anniston, Ala. **J. A. Conner** of Hyde Park Mills, Covington, Tenn., was elevated from second to first vice-president, and **A. J. M. Wanamaker** of Orange Mills, Orangeburg, S. C., was elected second vice-president.

James M. Bailey, vice-president of Judson Mills, Greenville, S. C., has been named, in addition, general manager of Gerrish Milliken Mill, Pendleton, S. C. **Garland G. Simmons,** treasurer and director of Drayton Mills, Spartanburg, has been appointed also general manager of the Laurens (S. C.) Mills.

Recently elevated from a vice-presidency to president of Bibb Manufacturing Co., Macon, Ga., was **Robert Train. G. B. Barnwell,** vice-

Need New Pickers?

. . . then, think of what you get in ALDRICH PICKERS!

As long as there have been pickers, there has been trouble with the shoes that hold the calender rack gears in mesh with their spur gears on the cross-shaft.

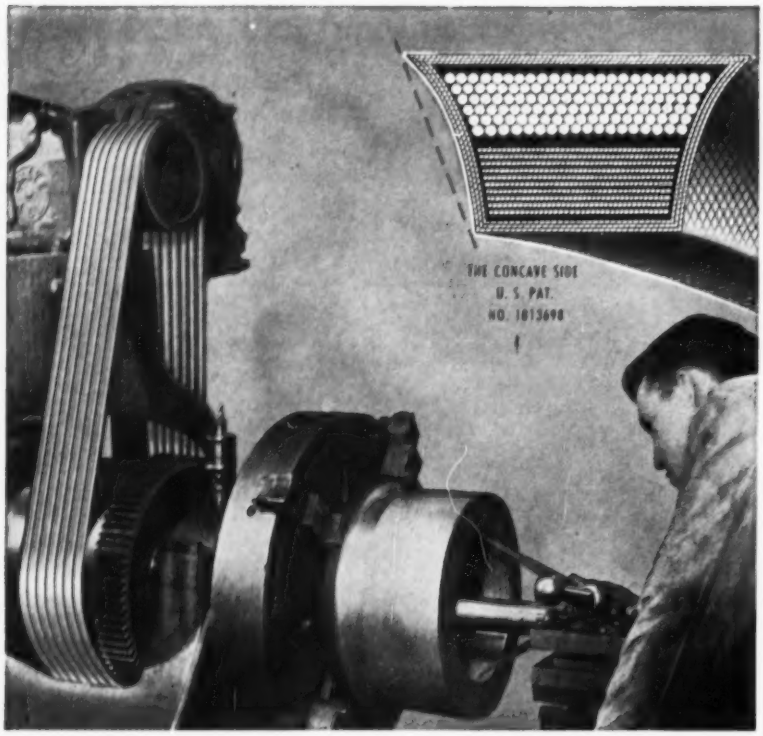
These shoes are not on the Aldrich calender. The roller, pictured above, running on an Oilite bushing and attached to a mounting pivoted on a stationary shaft in the calender, holds the calender rack gear exactly in place without any possibility of binding or jamming.

Furthermore, to make sure that the cross-shaft can't stick in a dry bearing, this shaft is mounted on ball bearings, which are permanently lubricated.

This is one of the many improvements in the Aldrich picker which eliminate trouble and help to make better laps.

AldricH MachinE WorkS

Greenwood, South Carolina



WHY you get more service from V-Belts with concave sides

Each sidewall of a Gates V-belt is concave (Fig. 1) — a precisely engineered curve that makes V-belts last far longer.

Fig. 1

Fig. 1-A

HERE'S WHY: on the bend around the sheave, the concave sides of a Gates V-belt fill out and become straight (Fig. 1-A). Thus the belt makes full contact with the sides of the sheave, grips the sheave *evenly*.

This even contact distributes wear uniformly across the sides of the belt. Uniform wear lengthens belt life; keeps costs down.

MAKE THIS SIMPLE TEST

Fig. 2

Fig. 2-A

Bend a straight-sided belt (Fig. 2). The sides bulge at the bend causing uneven contact in the sheave groove (Fig. 2-A). Naturally, wear is greater at points indicated by arrows. Result: shorter belt life, increased belt costs.

To cut down-time and V-belt replacement costs, specify belts that grip evenly and wear longer. Specify Gates Vulco Rope — the V-belt with concave sides. The Gates Rubber Co., Denver, Colorado — *World's Largest Maker of V-Belts.*

There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

Gates

TPA 109A

Gates Vulco Rope Drives

Personal NOTES ABOUT MEN YOU KNOW

president in charge of sales, was named senior vice-president; and **Hugh M. Comer,** controller, was elected vice-president and controller. **B. B. Snow,** agent at Porterdale, has been chosen vice-president in charge of the mill there. **A. I. McCowen** was named an assistant treasurer, and **G. L. Burkhalter** an assistant secretary.

Newly elected officers of the National Association of Woolen & Worsted Overseers are: president, **Emil H. Tegtmeier,** Hanover, Conn.; 1st vice-president, **Alfred O. Preuss,** Glastonbury, Conn.; 2nd vice-president, **Henry C. Laponsee,** Manchester, N. H.; 3rd vice-president, **Gregory L. Tite,** Charlton City, Mass.; treasurer, **Fred J. Liebold,** Lowell, Mass.; assistant treasurer, **Sullivan Gillette,** Lowell, Mass.; secretary, **James J. Burns,** Holyoke, Mass.; assistant secretary, **Joseph F. Nash,** Rockville, Conn.

Filling the new position of general manager and director of Deering, Milliken Service Corp., is **Kenneth M. Lowry,** former head of the industrial engineering department. In his new post Mr. Lowry will be in charge of industrial engineering, purchasing, cost, and placement in Greenville; fiber quality control and research in Union, and the engineering department in Spartanburg.

At a recent meeting, The National Council for Textile Education advanced to presidency former vice-president, **Dr. Martin J. Lydon,** president of Lowell Technological Institute. Chosen vice-president was **Cleveland L. Adams,** head of the School of Textile Technology at Alabama Polytechnic Institute, Auburn. **Raymond K. Flege,** head of department of textile engineering, Texas Technological College, was named secretary. (For photos, turn to page 113.)

Gunther Molue recently became overseer of dyeing at Dominion Woollens & Worsteds Ltd., Hespeler, Ont.

J. Dana Ramsbottom, Jr., has been promoted from overseer of the spinning department at the Hill division of the Bates Manufacturing Co., Lewiston, Maine, to superintendent of the Edwards division in Augusta. He assumes the position held by **Matthew S. Korol** who was recently

(Continued on page 196)

One of Our Most Important Services It Costs You Nothing!

Next to quality yarns and quality colors, color and yarn consultation can be one of the most important services we offer — even though it costs you nothing.

We can save you the embarrassment of selecting a shade which is unobtainable with the type of dyestuff you need, from the costly error of using dyestuffs that will bleach out, run, crock or fade rapidly, or from using yarns that may be good for some purposes, but not for yours.

On the other hand, we can recommend dyestuffs and yarns that are ideal for your purposes and that will make your fabrics more salable.

Much of this type of help is unobtainable from books (even if you had time to read them). It is information gained during nearly half a century of experience by the "largest package dyers in the world".

Franklin Process Color and Yarn Consultation is "conveniently yours" from any one of our dyeing plants, or from our New York office. Just ask and we'll oblige.

Franklin Process

Yarn Merchants and Largest Package Dyers in the World — Dyeing Exclusively on the Franklin Spring

Providence • Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Representatives — 40 Worth Street

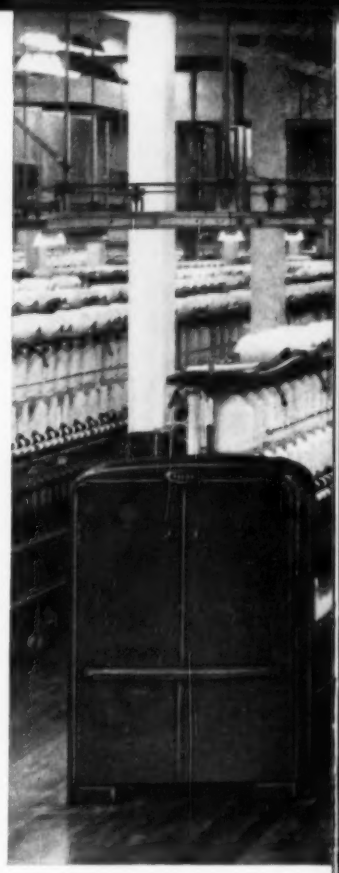
X ray view of Franklin Package — the "secret" of uniform shades. Don't say "package dyed". Say "Franklin Process Dyed".

Statistics make headlines...

but

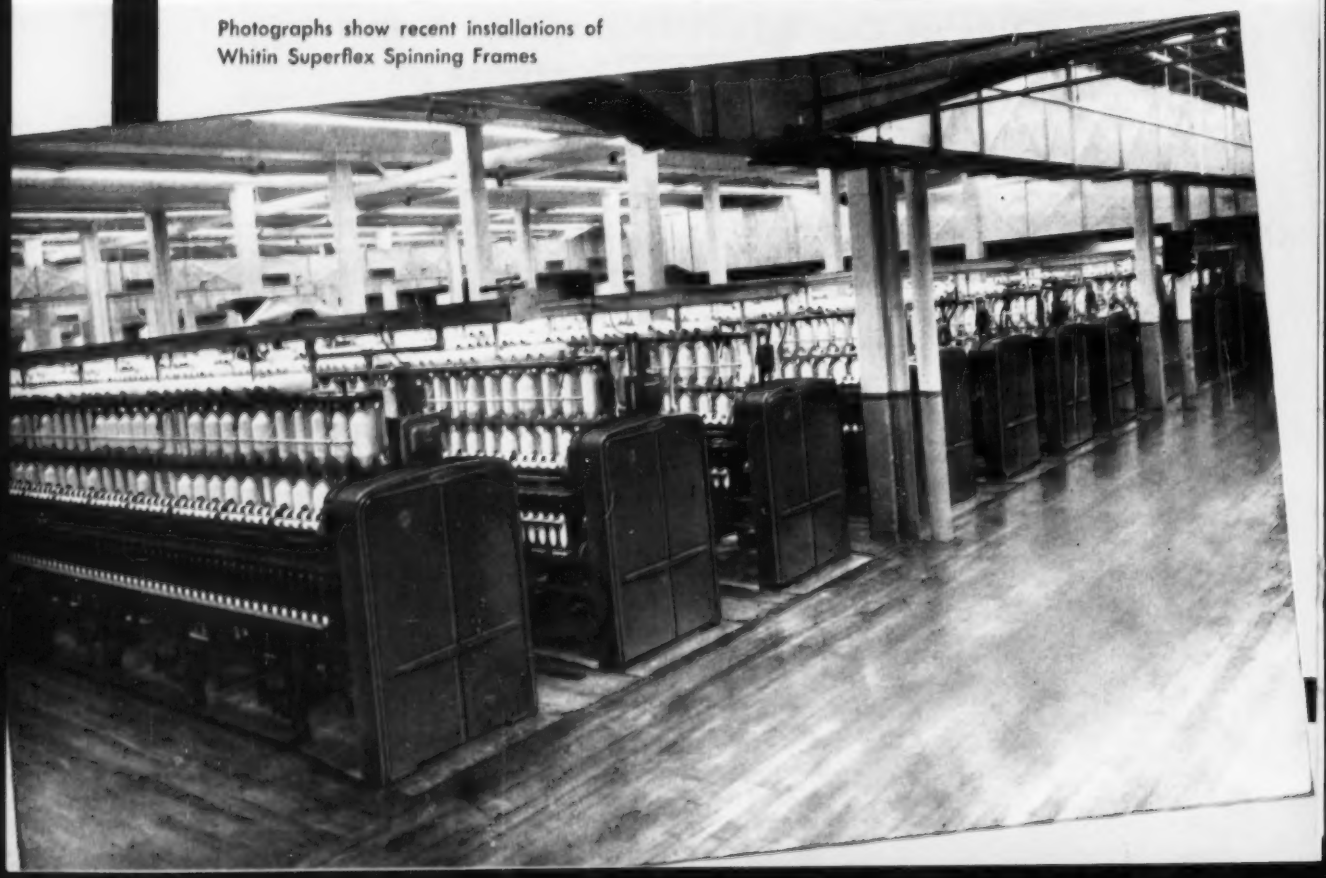
Performance makes Profits!

Statistics for machine production often make news, but actual machine performance plays the decisive part in creating mill profits. The performance of Whitin Superflex Spinning frames and the profits they are producing now in many leading mills are the best test of their true worth. That's why Whitin Superflex Spinning frames are the continuing and growing choice of mills demanding maximum yarn quality and minimum spinning costs — the essential ingredients of profits.



..so look at the profit-producing performance

Photographs show recent installations of Whitin Superflex Spinning Frames



# of Whitin SUPERFLEX* SPINNING

As a specific example of the advanced economies and practical benefits that can be secured with Whitin Superflex Spinning frames, the following mill data is presented, based on actual operating conditions in the production of high quality print cloth, 80 x 80, 39", 4.00 yds./lb., 31's warp and 41's filling.

	Warp	Filling
Yarn No.	31's	41's
Gauge	3½"	3"
Ring	2"	1⅞"
Traverse	11"	7"
Wt./Yn./Bobbin	.345 lbs.	.119 lbs.
Spindle R.P.M.	10,300	11,000
Traveler Speed, F.P.M.	5376	4140
Twist Multiplier	4.25	3.90
T.P.I.	23.7	25.0

	Warp	Filling
Front Roll Speed	138	140
% Efficiency	95	95
Lbs./Spdle./Hr.	.0265	.0203
Lbs./Spdle./120 Hrs.	3.180	2.436
Spdles./Operator	3900	3864

Labor cost per lb. including all direct and indirect help in Spinning Room . . . . . $.03322

For complete information ask your Whitin representative or write direct to us.

WHITIN MACHINE WORKS FOR 125 YEARS SERVICE TO THE TEXTILE INDUSTRY 1831 1956

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

RODNEY HUNT TEXTILE WET FINISHING MACHINERY

A LONG-TERM INVESTMENT IN SOUND ENGINEERING AND SKILLFUL STAINLESS STEEL FABRICATION

For more than a century, Rodney Hunt machines have helped the textile industry maintain high production and quality at a profit. Licensed under both Becco and DuPont patents, Rodney Hunt maintains a continuing program of research and development in collaboration with these and other companies to give the textile industry the benefit of the most modern processes and equipment.

DYEING

Dye Pads • Niptrol® Dye Pads
Agers • Pad Steam Dye Ranges
Tensitrol® Steamers
Tru-Shade® Combination Washing and Dyeing Kettles
Tru-Shade Sample Dye Kettles
Tru-Shade Dye Becks and Kettles
Carpet Dyeing Machines

BLEACHING

Bleaching Rangettes* (Becco & DuPont)
Bleaching Ranges (rope or open width)
Agers • Desize Ranges
J-Boxes (Becco & DuPont)
Saturators (rope or open width)
Standard Open Width Washers
Tensitrol Steamers
Tensitrol Washers (rope and open width)

WASHING

Standard Open Width Washers
Tensitrol Washers (rope and open width)
Slack Loop® Washers
Endless Felt Washers
Tru-Shade Combination Washers and Dyeing Kettles
Yankee Clipper® Washers
Tru-Shade Scouring Machines

FINISHING

Scutchers • Extractors
Niptrol Mangles • Tensitrol Steamers
Wring-Master® Squeeze Rolls

AUXILIARIES

Batchers
Compensators (rack or swing type)
Draw Reels • Entering Equipment
Folders • Scutchers
Poteyes • Roller Poteye Guides
Reels: round, hump, triangular, oval
Rolls: wood, metal, rubber, plastic, tube cast, chrome plated, special design
Tension Bars
Whirlwind® Sample Dryers
Special Machines
Latex Backing Machines
Stainless Steel Tanks
Wring-Master Squeezers

SEND FOR LITERATURE

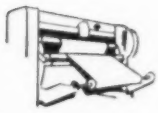
Catalog No. 103
Bleaching ranges, Rangettes, Washers and Saturators. Illustrations, specifications and schematic drawings.

Bulletin No. 54
Niptrol Mangle

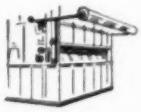
Bulletin No. 44
Textile Wet Finishing Equipment

Catalog No. 849
Tensitrol Washers. Detailed description of this unique washer and specifications.

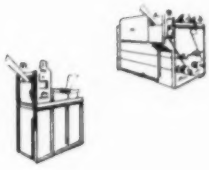
*Trademark



Niptrol Mangle

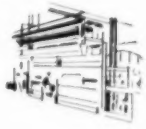


Tru-Shade Dye Beck

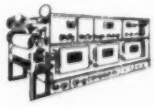


Bleaching Ranges and Rangettes

Tensitrol Washer



Tru-Shade Carpet Dyeing Machine

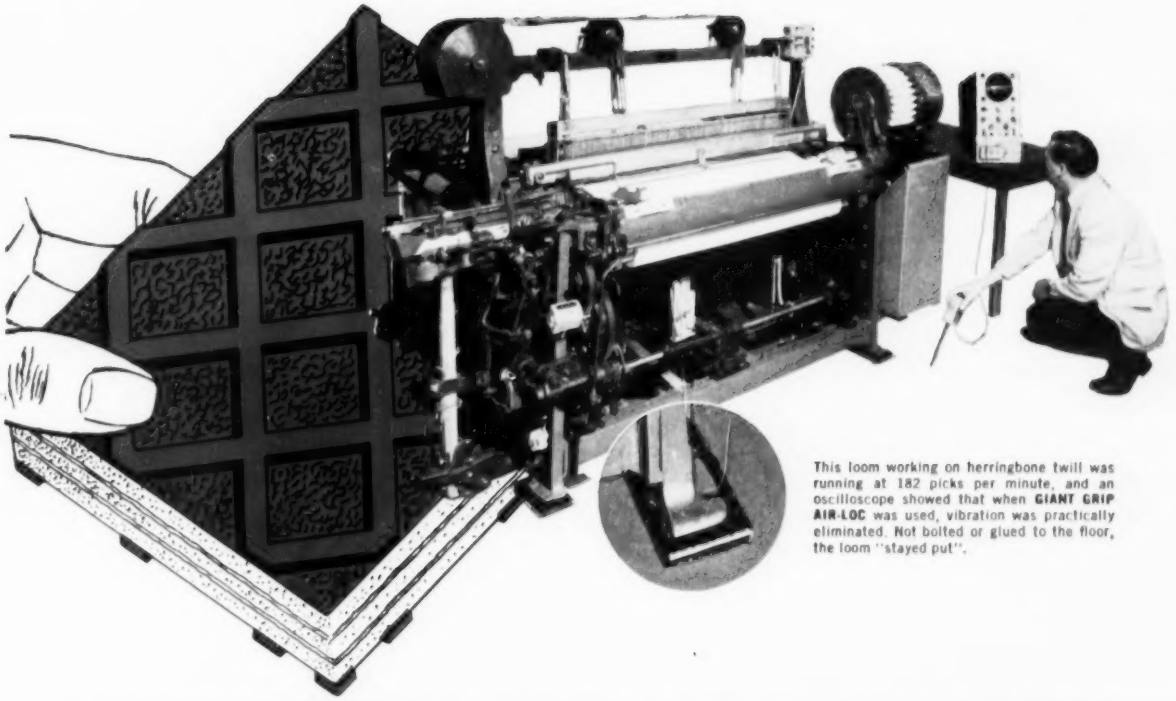


Tensitrol Steamer

Shaf-Tite® Rolls and Reels

RODNEY HUNT MACHINE CO.
65 Mill St., Orange, Mass., U.S.A., Tel.: King Dale 4-2511

DISTRICT OFFICES:
Merchantville, N. J., 5 W. Park Ave., Tel.: Merchantville 8-4357
Greenville, S. C., 121 Cleveland St., Tel.: Greenville 2-0311



This loom working on herringbone twill was running at 182 picks per minute, and an oscilloscope showed that when **GIANT GRIP AIR-LOC** was used, vibration was practically eliminated. Not bolted or glued to the floor, the loom "stayed put".

DEVELOPED FOR LOOMS ONLY

GIANT GRIP

(patent applied for)

Air-Loc ® 4·17·1

is the only loom mount that gives you *all* of these advantages:

1. *Saves you money* on installation because you use no bolts, glue or cement.

2. Special *grip surface* HOLDS looms in place, on any type of floor.

3. *Can be reused* when looms are moved, because its vinyl-cork construction is more resilient than any known mounting on the market today.

4. *Completely resists* oil, ozone and detergents.

5. Turns *vertical* loom movement into *horizontal* movement and practically eliminates the vibration that can cause downtime.

6. *Self-leveling* . . . insures permanent loom alignment.

For a sample of GIANT GRIP AIR-LOC call:

Southern Representative:
YEOMANS TEXTILE MACHINERY CO.
Spartanburg, S. C.

Northern Representative:
AMERICAN SUPPLY CO.
Central Falls, R. I.

or write to the manufacturer:

CLARK, CUTLER, McDERMOTT CO.

FRANKLIN, MASSACHUSETTS *Telephone* FRANKLIN 1200

Step Up Roll-Loading Efficiency

...and Cut Costs!... with Foxboro Stabilflo* Pneumatic Loading

Unmatched for operating efficiency and economy at low initial cost! That's the Foxboro #8D Stabilflo Air Motor ... your best choice for roll loading on padders, mangles, quetsch boxes, and other equipment requiring moderate roll separation.

Stabilflo is an air-to-load, spring-to-lift diaphragm motor. Normally connected direct to top roll bearing without levers, it practically eliminates friction. No pressure seals or stuffing boxes. No air leakage. Easy to install. Typical installations have operated for 5 years without attention.

100 sq. in. motor diaphragm, with wide choice of totally-enclosed coil springs, permits roll loads from less than roll weight up to 10 tons.

Write for details on this and other sizes of Stabilflo Air Motors, and on other Foxboro Pneumatic Roll Loading Systems. **The Foxboro Company, 481 Neponset Ave., Foxboro, Massachusetts, U.S.A.**

*Trade Mark

Typical application of Foxboro Stabilflo Air Motor. Note splashproof design. Compact control panel delivers regulated air to Stabilflo Motor mounted at each end of roll ... permits easy duplication of uniform loading at any time.

FOXBORO REG. U. S. PAT. OFF.

PNEUMATIC ROLL LOADING

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

the hidden pluses of nylon for carpeting

You are selling positive performance characteristics when you sell nylon carpeting. It's sound merchandising for you, and true value for your customer, when you offer the performance pluses that make nylon today's best buy in carpeting.

HERE'S WHY:

+1 **Permanent Textures.** More *permanent* than wool, cotton or rayon.

+2 **Resists Abrasion and Scuffing.** Will out-wear comparable carpeting made from *any other* fiber.

+3 **Resists Crushing and Matting.** More crush resistance and less matting than comparable wool, rayon or cotton floor coverings in service.

+4 **More Resilient.** More resilient than comparable wool, rayon or cotton floor coverings after continued usage.

+5 **Cleanable.** Nylon is an easy-to-care-for fiber. The round, smooth nylon fibers prevent dirt from clinging. May be spot-cleaned and shampooed. Dries quickly.

+6 **Economical.** The strongest and toughest of all carpet fibers, nylon will out-wear comparable wool and rayon fabrics, thus be actually less expensive in the long run.

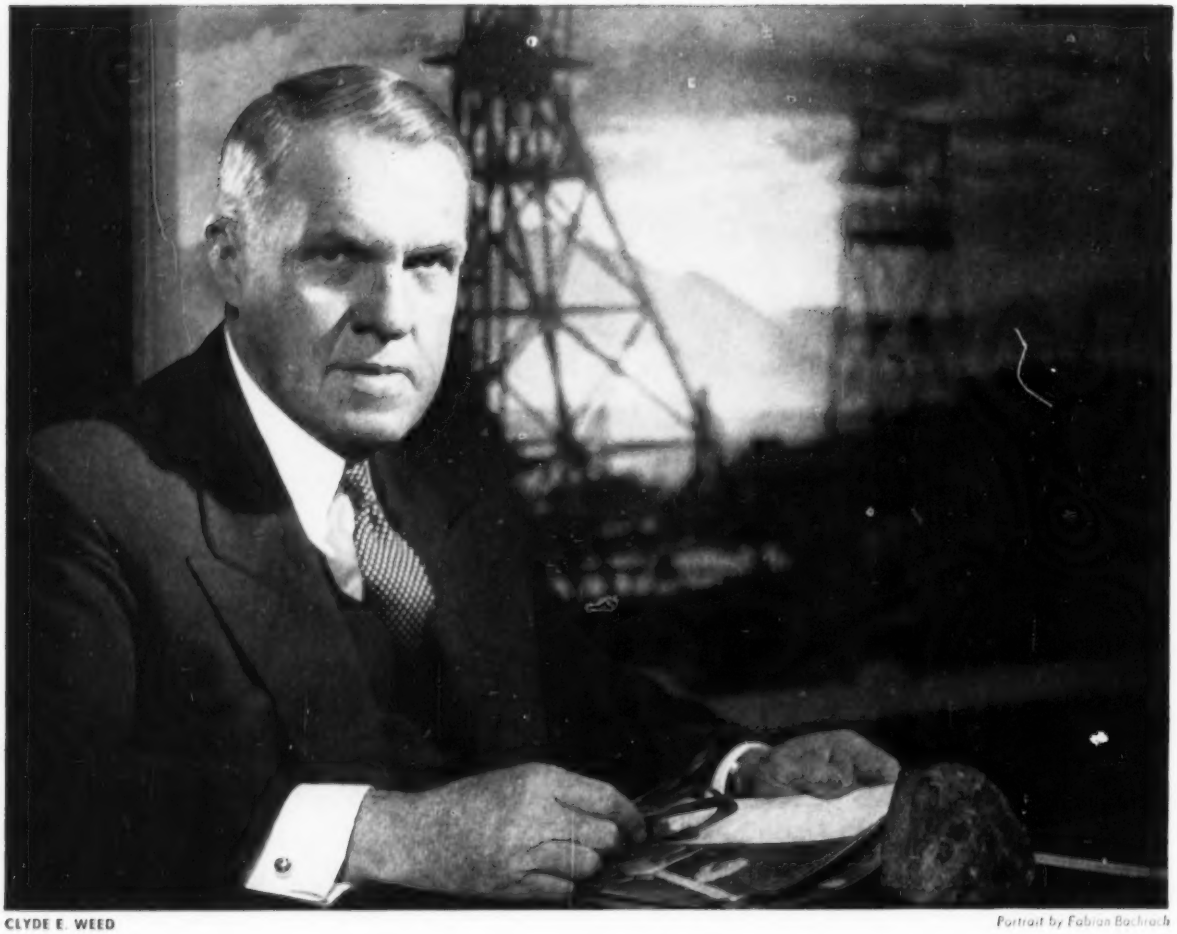
+7 **Mothproof, Insect-Resistant.** Never a worry about moths! Carpet beetles cannot attack nylon carpeting.

+8 **Decorator Colors.** Nylon can be dyed in lasting colors and an attractive range of shades.

Any reliable manufacturer can deliver these benefits in carpeting made from 100% IRC NEW NYLON fiber. In addition, manufacturers can, and are delivering superior carpeting using respectable percentages of nylon and featuring many of the pluses listed above.

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Offices: 500 Fifth Ave., New York 36, N. Y. 627 Guilford Bldg., Greensboro, N. C.



CLYDE E. WEED

Portrait by Fabian Bachrach

"22,514 Anaconda Employees Are Buying U. S. Savings Bonds

"In October, 1955, only 34% (11,140) of the nearly 33,000 Anaconda organization employees in this country were buying U. S. Savings Bonds through the Payroll Savings Plan.

"Late in 1955, we conducted a simple person-to-person canvass which put a Payroll Savings Application Blank in the hands of every employee. There was no pressure, no special promotion—just the Application Blank. Our employees did the rest.

"Recently, our records showed that 22,514 of our men and women—69%—are now Payroll Savers. Every new employee is given a Payroll Savings Application Blank and an opportunity to join with his fellow workers in building personal security through systematic thrift.

"We believe The Payroll Savings Plan—with an enrollment of 8,000,000 employees of more than 40,000 companies—is a significant contribution to the Government's effort to check inflation and maintain a sound dollar."

CLYDE E. WEED, *President*
The Anaconda Company

Why not take a *personal* interest in *your* Payroll Savings Plan? Your State Director will be glad to show you how to install the Payroll Savings Plan or revitalize an existing plan. Phone, wire or write, today, to Savings Bond Division, U. S. Treasury Department, Washington, D. C.

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

TEXTILE INDUSTRIES

This Cocker All Purpose Slasher has . . . High Speeds Accurate Controls Ease of Operation

. . . for all yarns

HIGH SPEEDS Sustained speeds of 125 yards a minute — without noticeable vibration — are made possible by extra heavy construction and by Cocker's patented Friction which will not run hot regardless of speed or load.

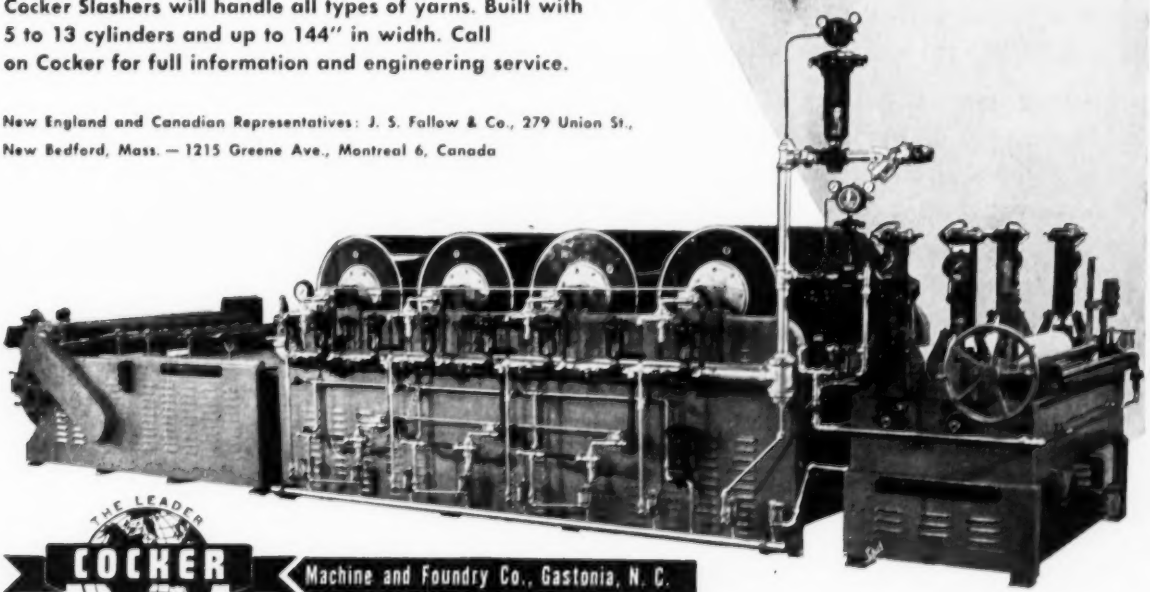
ACCURATE CONTROLS All operations are under automatic or push button control at all times. Speed is rheostat controlled with stopping, starting, and intermediate push button control. Variable speed DC drive maintains even tension at all times. Tachometers, output and stretch indicators, etc. have long been standard equipment on all Cocker Slashers.

EASE OF OPERATION Special Cocker features improve operating efficiency. Among these are • air operated carrier and delivery rolls • fast and simple latch release for beam doffing • air operated ironing compressor roll with finger tip variable pressure control.

SMOOTH, HARD BEAMS The new Cocker Differential Compensating Friction Control with DC Drive produces smooth, hard, even beams and gives 20% to 25% more yarn per loom beam. Also available with multi-motor drive.

Cocker Slashers will handle all types of yarns. Built with 5 to 13 cylinders and up to 144" in width. Call on Cocker for full information and engineering service.

New England and Canadian Representatives: J. S. Fallow & Co., 279 Union St., New Bedford, Mass. — 1215 Greene Ave., Montreal 6, Canada



THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Question:

In how many textile applications can Taylor controls help you cut costs?

Answer:

Twenty-five *(at least)*

It's true! 38 years ago Taylor was the first instrument manufacturer to get interested in the textile business. We introduced the first practical system of Slasher control in 1919. We've grown up with the industry and today we can offer you instrumentation that will save you money on practically any application in your mill from the first phase of processing to the last. Listed below are some of the time-proven Taylor control systems now available:

SIZE COOKING	BEAM DYEING	DRYING
SIZE STORAGE KETTLE	FINISHING	CARBONIZING
SLASHING	MERCERIZING	WASHING
KIER BLEACHING	SKEIN DYEING	CONTINUOUS CRABBING
CONTINUOUS BLEACHING	TOP DYEING	PADDING
TENTERING	JIG DYEING	DECATING
PIECE DYEING	WOOL SCOURING	POWER PLANT
PACKAGE DYEING	CONTINUOUS DYEING	AIR CONDITIONING
	CAKE SOAKING AND DRYING	

Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

Taylor Instruments MEAN ACCURACY FIRST

CUTLER-HAMMER'S 4105 TYPE A SAFETY SWITCH WITH DUO-STRENGTH OPERATING HOOKS ADDS NEW SAFETY TO SAFETY SWITCH PERFORMANCE

This is the finest, most modern safety switch . . . the Cutler-Hammer 4105 Heavy Duty Type A Safety Switch. The 4105 combines the famous Cutler-Hammer "heat proof dependability" with a super-strength construction for safer, positive switch performance. Mill electricians, engineers and contractors recommend and install the Cutler-Hammer 4105 Safety Switch, and here's why.

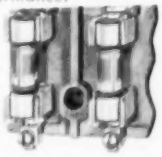
The duo-strength operating hook and hook insulator insure the dependable performance so vital to reliable safety switch operation. The high-strength steel hooks provide an all-steel linkage between the contact blades and operating handle that will faithfully open and close the contacts even after years of continuous service. The Alkide hook insulator and operating rod insulating sleeve provide double insulation for double-sure safety.

Other important features of design include automatic pressure fuse receivers; no screws to tighten . . . fuses can't work loose or be left loose while in service. Visible contact blades that instantly indicate the circuit condition. The 4105 panel mounted mechanism is readily interchangeable with that of the 4101 design for rapid replacement without case-and-conduit work.

For full information see your Authorized Cutler-Hammer Distributor or write on your company letterhead for Cutler-Hammer Motor Control for Textile Machines, Pub. EL-115. CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
SAFETY SWITCHES
C-H

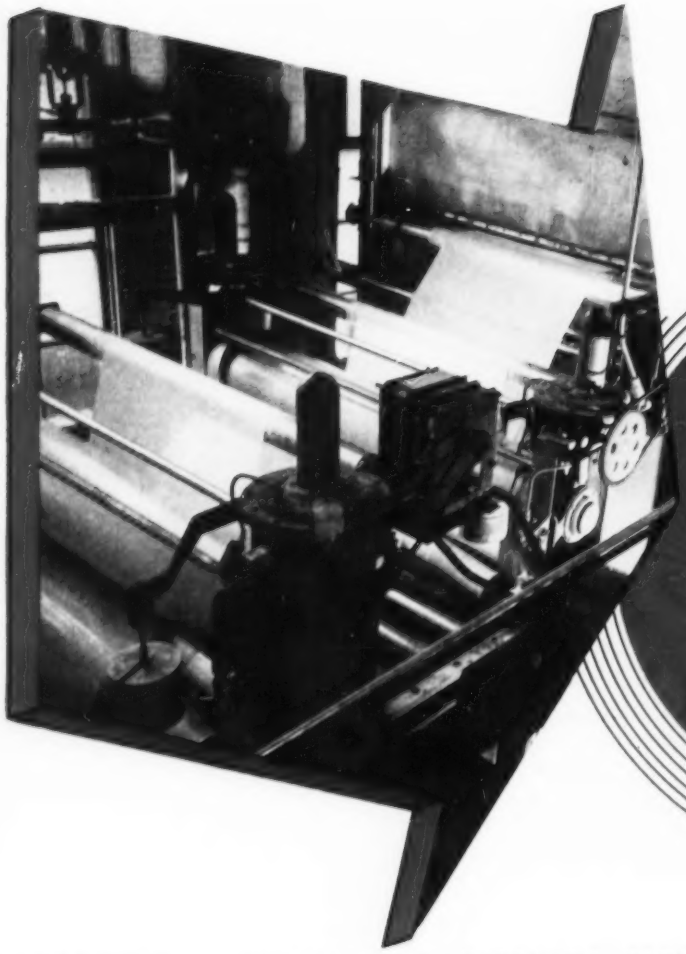
High strength glass fibre Alkide hook insulator and sleeve type operating rod insulator form the finest electrical safety. Hook is of high-strength steel for long-lasting switch performance.



Automatic pressure fuse receivers maintain uniform clip-to-fuse contact. Fuses won't work loose . . . no tools required to install fuses.

Sub-base panel mounting simplifies maintenance . . . quick, sure, economical. New 4105 mechanism will fit 4101 style case; no new case or conduit work.

Available in sizes from 30 amperes to 1200 amperes; 2, 3, and 4 poles, fusible and non-fusible.



Built by Cook-P & N Machine Co., Inc. for Dominion Textile Co. Ltd. this new open width bleaching range handles cloth up to 60" wide, at speeds from 75 to 150 yards per minute.

33

STOWE-WOODWARD ROLLS

GUARD THE QUALITY OF 9 MILES OF CLOTH IN THIS BLEACHING RANGE

Because anything less than the best rubber roll performance could result in the loss of up to 9 miles of cloth in this open width bleaching range; 33 Stowe-Woodward rolls were specified by its builder, Cook-P & N Machine Co., Inc.

Designed and built for Dominion Textile Co. Ltd., the machine has been highly successful in producing quality bleached goods with materials ranging from heavy twills and poplin to broadcloth.

Wherever rubber roll performance is critical . . . and it is in almost any finishing operation . . .

. . . specify rubber rolls by Stowe-Woodward.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

"All the hot water in this 7,000 gallon tank didn't cost us a cent to heat," says James A. Hendley, Manager, Textile Divisions of Talon, Inc.

P-K waste water heat reclaimer and pre-krete® lined accumulator tank at Stanley, N. C., plant supplies 180,000 gallons of hot water daily to dyehouse.

Talon saves $1,000 a month with P-K waste water heat reclaimer

Plenty of hot water is essential in dyeing 10,000 lb. of zipper tape and cord per day for the Textile Division of Talon, Inc. Two boilers could not meet the demand. Now a P-K waste water heat reclaimer with a 7,000 gal. pre-krete® lined accumulator tank is using hot waste dye liquor to heat process water—and doing it so successfully that the North Carolina plant is saving $1,000 a month in fuel costs alone—enough for the reclaimer to pay for itself within ten months!

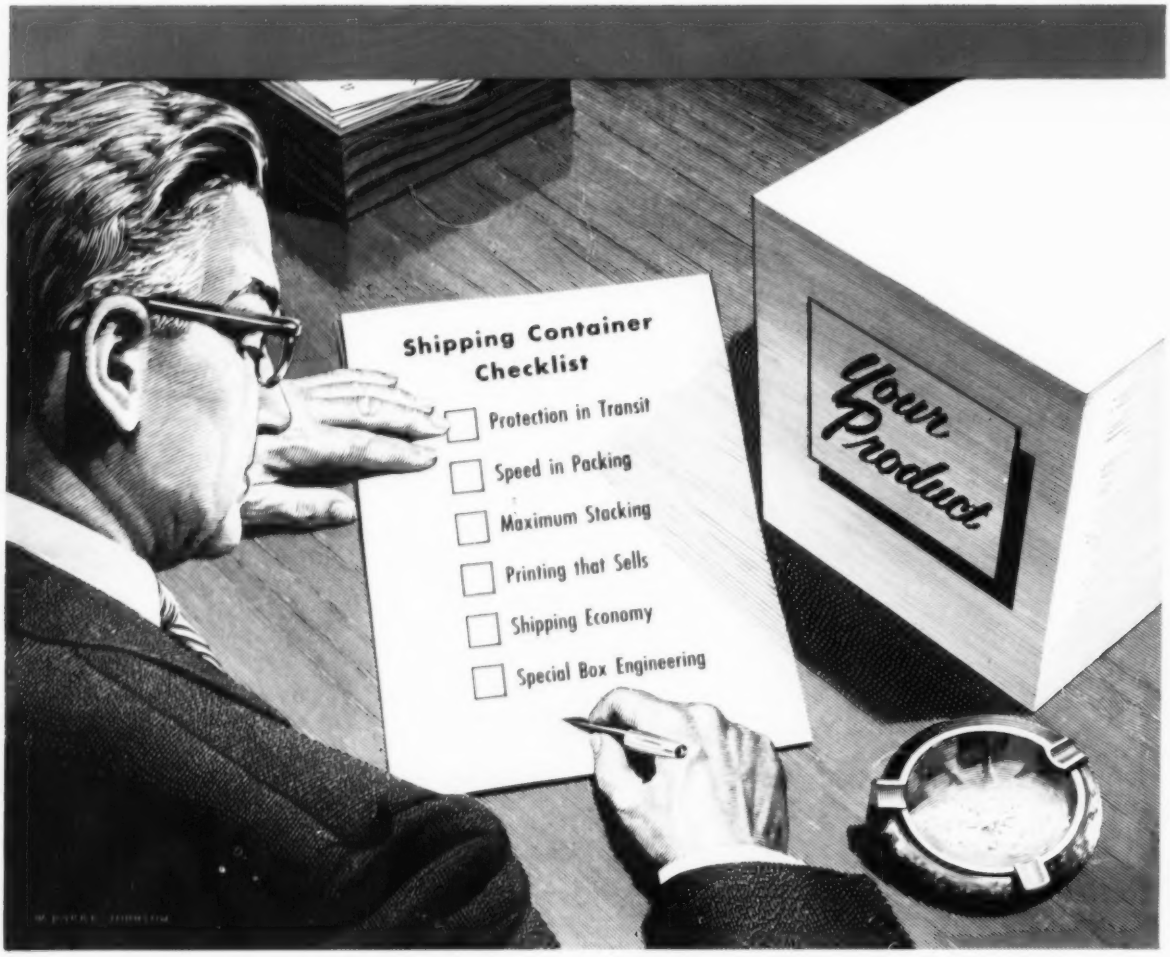
City water, entering at temperatures of 50-85° F, is raised to 160° F as it passes through the reclaimer. An instantaneous heater boosts it about 50° F more for use in dyeing. As a result, Talon is saving 2-million cubic feet of natural gas a month; ample hot water is always available for peak load periods; and product quality is improved. Furthermore, Talon reports, "no maintenance is needed except cleaning, which takes one man just two hours every three months."

P-K's leadership in waste heat reclamation is based not only on savings like these, but on 75 years of specialized experience and a record of performance that any P-K customer will confirm.

Write today for P-K's descriptive catalog. Then ask for a P-K engineering survey of the heat reclaiming possibilities in your plant. There is no obligation. **The Patterson-Kelley Co., Inc., 1110 Wilson Avenue, East Stroudsburg, Pa.** ℗ 1957

Patterson Kelley

Waste Water Heat Reclaimers • Storage Water Heaters • Condensate Coolers • Instantaneous Heaters • Steam-Mizers • Feed Water Heaters



CHECK THE FACTORS MOST VITAL TO YOU

Whether you're President, Vice-President, Treasurer, Purchasing Agent, Sales Manager, Production Manager, Traffic Manager, Advertising Manager...the above factors in selecting the right shipping containers deserve your personal attention.

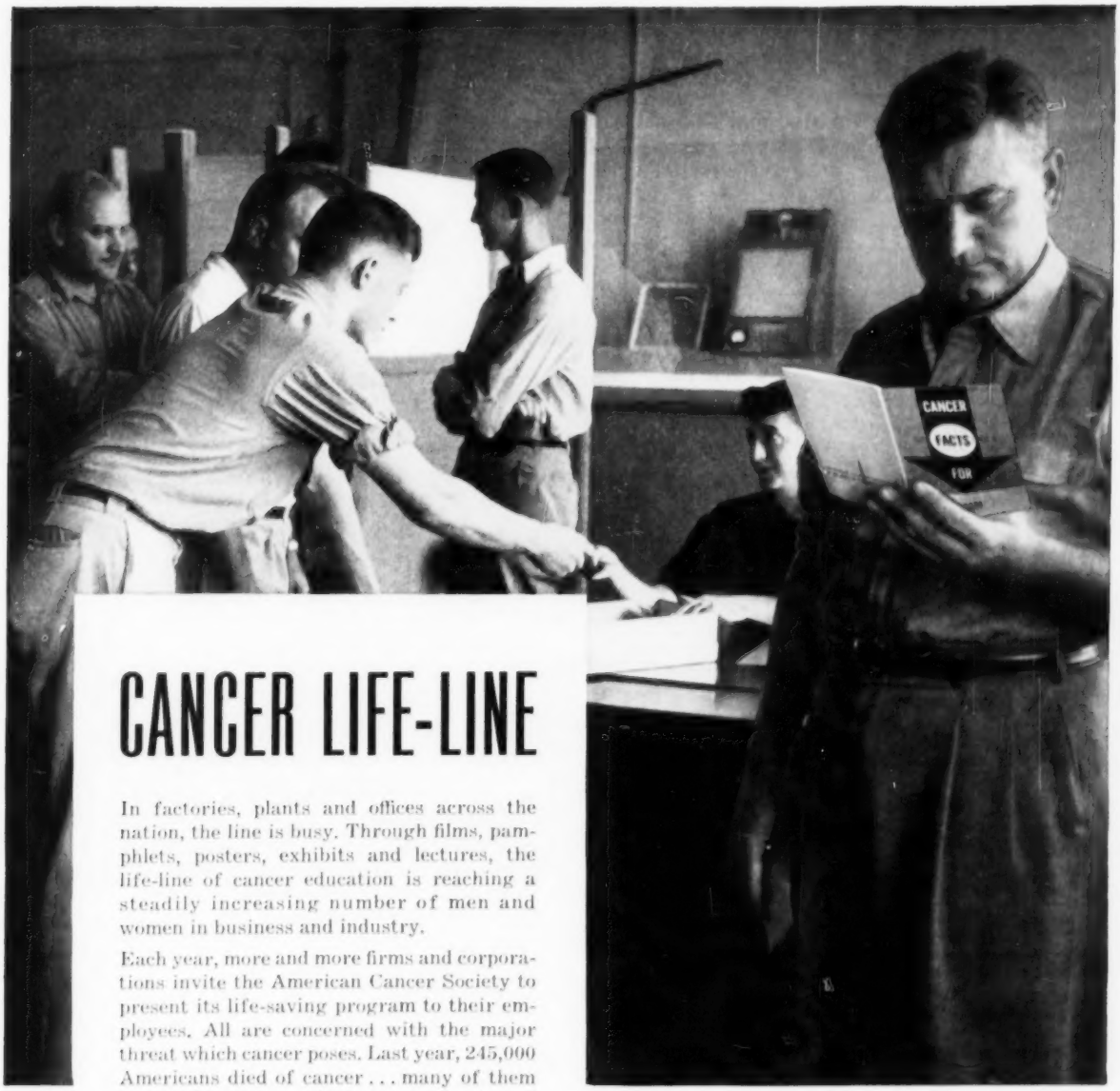
Call your nearby Gaylord packaging engineer for boxes made to your prescription.

Gaylord Boxes

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION



CANCER LIFE-LINE

In factories, plants and offices across the nation, the line is busy. Through films, pamphlets, posters, exhibits and lectures, the life-line of cancer education is reaching a steadily increasing number of men and women in business and industry.

Each year, more and more firms and corporations invite the American Cancer Society to present its life-saving program to their employees. All are concerned with the major threat which cancer poses. Last year, 245,000 Americans died of cancer . . . many of them needlessly. Among them were experienced executives, key officials, skilled workers. Their loss to business was incalculable. The greater loss, in terms of personal tragedy, was appalling.

Yet, thousands and thousands of them could have been saved *if they had known the importance of going to their doctors in time.* Early detection plus prompt treatment could literally mean the difference between life and death. This, and many other facts of life about cancer, are part of the education program which the American Cancer Society offers you – in your plant or factory. For additional information, call the American Cancer Society office nearest you, or write to "Cancer" in care of your local Post Office.

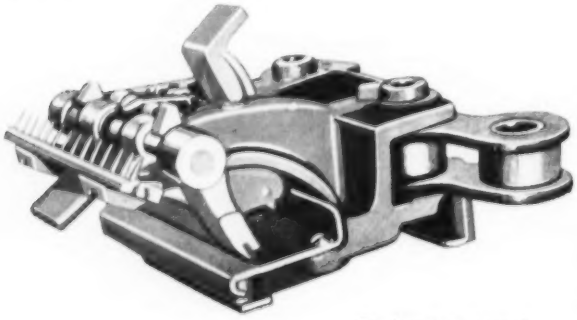
AMERICAN CANCER SOCIETY

VITS Drying Tenter Combines High Speeds with Fine Finish

Two section Vits Tenter Dryer

Unique, Single-Jet Drying System Uses Steam-Air Mixture

Two vital needs of today's textile industry—higher production and finer finishes—are now being met by the Vits Universal Tenter. The advanced design of this machine insures complete uniformity in the drying, finishing, curing, polymerizing and direct dyeing of all textile fabrics. It not only improves fabric quality, but does so at much greater speeds—with immediate savings in labor, power consumption and floor space.



Combination pin and clip chain link

Single-Jet Drying System provides a *completely balanced,* high velocity drying focus—eliminating stagnant air zones within the tenter and preventing even the slightest color migration. Axial rather than radial impellers circulate 3½ to 4 million cu. ft. of air per hour in a two-section, 30 ft. Vits Tenter.

Steam-Air Mixture of 65% steam to 35% air at 300 to 400 F. prevents effectively any oxidizing, yellowing, overdrying or weakening of the fabric—eliminates harsh hands on woolens resulting from hot air systems. A single pass dries and cures resin impregnated cottons, dries and heat sets synthetics. Temperature for curing can be raised to 500 F.

Combination Pin and Clip Chain operates with automatic changeover for either application, handles any type of fabric. Chain speeds of 250 yds. per minute are possible without mechanical difficulty.

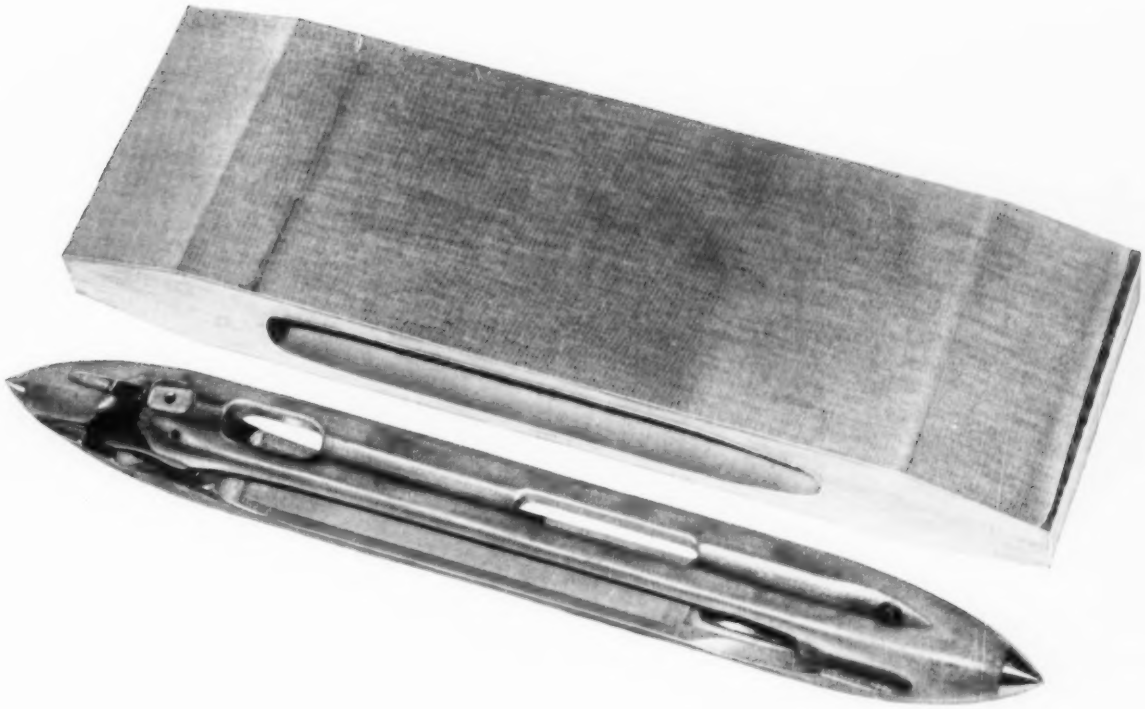
Other Features—Overfeeds of 40 to 45% • Evaporative capacity of 750 lbs. of water per hour in one section • Specific steam consumption of 1.4 lbs. per lb. of water evaporated • Closed circulation system.

Write for complete information.

COSA TEXTILE DIVISION

Lay-on-air & Tenter Dryers, Padders & Other Finishing Mach. · Spindles · Roller Bearing Inserts · Automatic Moisture Control & Others

COSA CORPORATION, 405 LEXINGTON AVENUE, NEW YORK 17, N. Y.



New **MICARTA**® plastic shuttle lasts at least 3 times as long as wood

Rugged Westinghouse Micarta molded-plastic shuttles reduce your weaving room costs by giving you longer shuttle life and lower maintenance costs.

When you consider what conventional shuttles can cost you in breakage of shuttles, picker sticks and other vulnerable parts, increase in off-quality cloth, loss of production and higher labor and repair costs, it's easy to figure what long-lasting Micarta shuttles can mean to your weaving room.

Shuttles are produced out of a solid, uniform piece of grainless molded plastic.

There is no cracking or breaking . . . no snagging of delicate fabrics . . . no need to worry about splintering.

Westinghouse does not make the finished shuttle, but supplies shuttle forms to the Southern Shuttles Division, Steel Heddle Mfg. Co., Greenville, S. C., which produces economical, long-life Micarta shuttles under the trade name Duramold. Make sure Micarta plastic is used in the shuttles you buy for your mill. J-06655-X

WATCH WESTINGHOUSE!

*WHERE **BIG** THINGS ARE HAPPENING **TODAY!***

Ideal Drawing* Now Faster and Better than Ever

Now 6 BIG New Features

Increase Speed

Improve Operation

1. **IDEAL MAGNETIC CLUTCH**
2. **PUSH BUTTON CONTROL**
3. **ELECTRIC KNOCK-OFF**
4. **MECHANICAL CARD SLIVER LIFT**
5. **IDEAL-AIR CLEANER (by Bahnson)**
6. **ELECTRIC YARDAGE COUNTER**

When Ideal Drawing was first introduced in 1949, its speed was limited to about 240 feet a minute by other parts of existing frames. In 1954 the new Ideal Ball Bearing Coiler System*—with ball bearing head end assembly—permitted safe speeds up to 450 feet a minute.

1. IDEAL MAGNETIC CLUTCH Replaces line shaft and pulleys. Provides jerkless starts—instant stops. Practically eliminates vibration.
2. PUSH BUTTON CONTROL for jog, start, and stop. Simplifies piecing up ends at front.
3. ELECTRIC KNOCK-OFF
   For Yardage Counter
   For Trumpet Knock-Off—prevents bad sliver from entering can
   For Spoon Knock-Off—detects singling and broken end back of spoon
4. MECHANICAL SLIVER LIFT Synchronizes sliver pick-up with frame speed.
5. IDEAL-AIR CLEANER (by Bahnson) Prevents accumulation of loose lint.

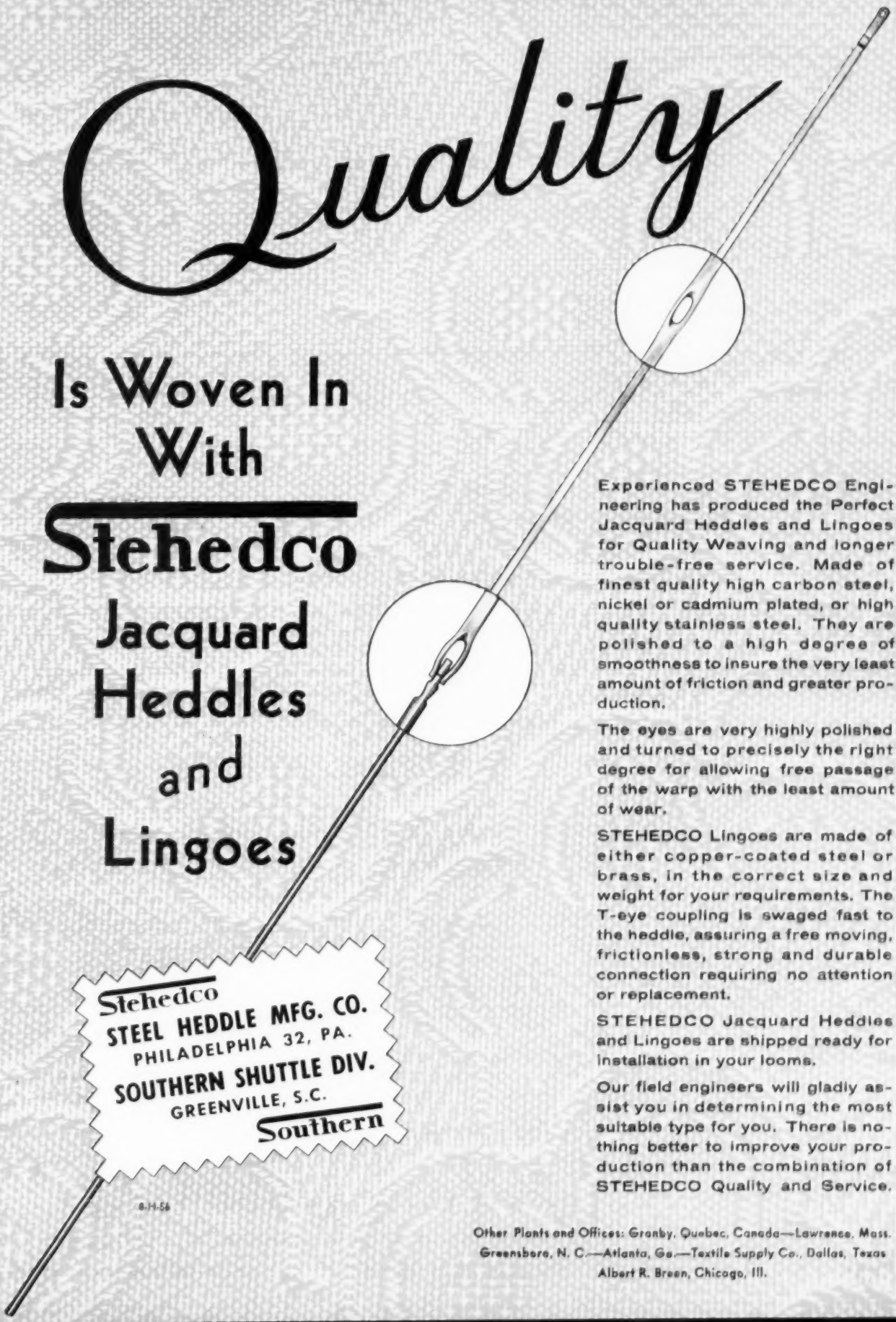
Some of these features can be incorporated on your present frames, but for the ultimate in drawing speed, quality, and efficiency, get full information on the new Ideal Drawing Frame—always the best—now better than ever . . . backed by the pioneers in high speed drawing and by over 13,000 deliveries now in use.

*Patent Nos. 2,610,363, 2,490,544, 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

Quality

Is Woven In With Stehedco Jacquard Heddles and Lingoes



Experienced STEHEDCO Engineering has produced the Perfect Jacquard Heddles and Lingoes for Quality Weaving and longer trouble-free service. Made of finest quality high carbon steel, nickel or cadmium plated, or high quality stainless steel. They are polished to a high degree of smoothness to insure the very least amount of friction and greater production.

The eyes are very highly polished and turned to precisely the right degree for allowing free passage of the warp with the least amount of wear.

STEHEDCO Lingoes are made of either copper-coated steel or brass, in the correct size and weight for your requirements. The T-eye coupling is swaged fast to the heddle, assuring a free moving, frictionless, strong and durable connection requiring no attention or replacement.

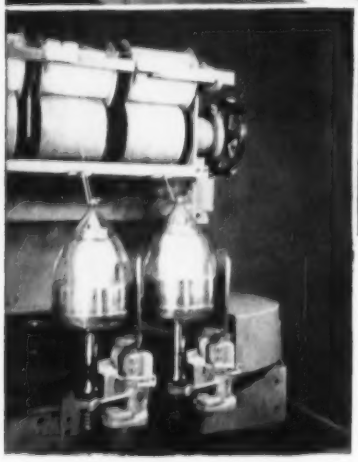
STEHEDCO Jacquard Heddles and Lingoes are shipped ready for installation in your looms.

Our field engineers will gladly assist you in determining the most suitable type for you. There is nothing better to improve your production than the combination of STEHEDCO Quality and Service.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

8-H-56

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass. Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas Albert R. Breen, Chicago, Ill.



Wherever you want to protect something

. . . that's a place for A-L Stainless Steel

In a textile plant, like the applications pictured above, Allegheny Ludlum Stainless Steel protects against off-colors in the dyeing and finishing department because it cleans up easily and quickly from batch to batch, leaving no traces of the previous dyes. In yarn twisters and other equipment in the weaving department, A-L Stainless provides the hard, smooth surface and high abrasion-resistance that protects against snagging and binding.

Food, beverage, dairy, drug and chemical plants use A-L Stainless Steel to protect the purity of their products; hospitals, hotels and restaurants use it to protect appearance and sanitary standards; cars, trains and planes use it to protect strength and safety. And they all gain a host of bonus benefits from stainless steel, too: such as far less cleaning and maintenance expense, far longer life in service, and far greater economy in the long run.

No other metal can match stainless steel in these qualities. In addition, A-L Stainless is easy to fabricate and we produce it in every form or shape that you may require.

● Let us help you to profit by it. ***Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.***

Write for your copy of

"STAINLESS STEEL IN PRODUCT DESIGN"

40 pages of useful engineering and fabricating data, including practical examples showing where, when and how stainless steel improves design, adds benefits, helps sales.

ADDRESS DEPT. TI-85

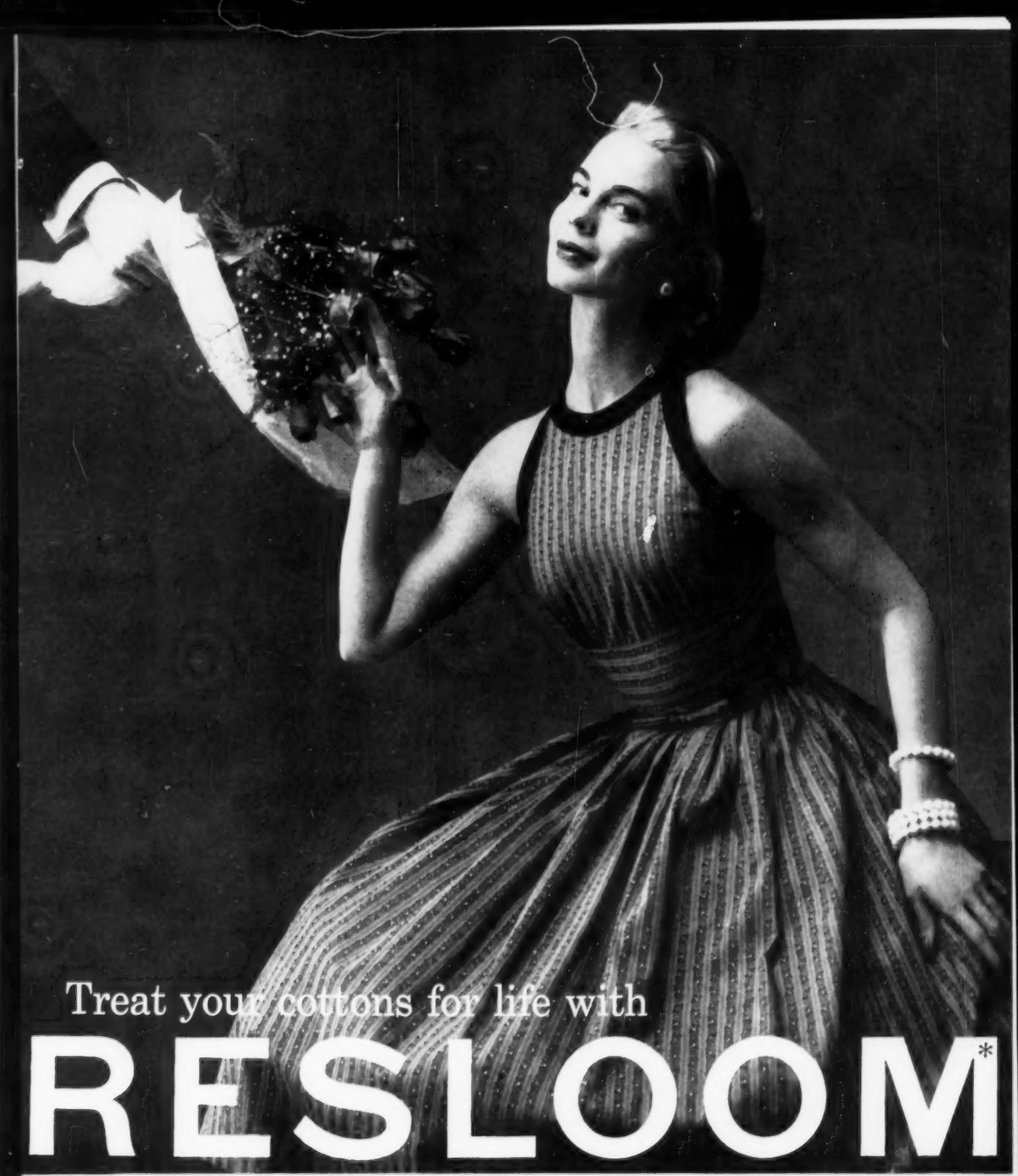
For Stainless Steel in ALL Forms—call

Allegheny Ludlum

Warehouse stocks carried by all Ryerson Steel plants

AL® STAINLESS STEEL

WSW 6092



Treat your cottons for life with

RESLOOM*

With Monsanto cyclic urea resin . . . RESLOOM E-50 . . . your washout worries are ended!

MONSANTO

*RESLOOM: REG. U. S. PAT. OFF.

The outstanding effectiveness and durability of Resloom E-50 is becoming the talk of the industry. When cottons are treated with this Monsanto resin, they require little or no ironing—even after repeated laundering.

A Resloom finish also demonstrates long-lasting crush resistance and dimensional stability.

Ordinary modified urea formaldehyde resin reacts with itself. Not Resloom E-50. Monsanto designed its thermosetting resin to react exclusively with the fabric. Active ingredients diffuse into the interior of cellulosic fibers and actually modify fiber characteristics.

Call in Monsanto for expert counsel on how to "treat your cottons for life." In addition to Resloom E-50, Monsanto also supplies melamine finishing resins, tradenamed Resloom HP and M-75, as well as Catalyst AC for stepping up curing efficiency. Write on your letterhead for technical bulletin and experimental samples. Monsanto Chemical Company, Plastics Division, Room 1886, Springfield 2, Massachusetts.

MICRO SWITCH . . . FIRST IN PRECISION SWITCHING

Here are easy, quick and economical ways to boost plant production

...AT LOW COST

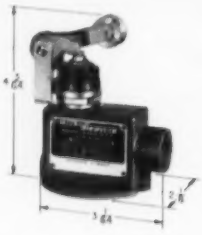
There are literally "uses unlimited" for MICRO SWITCH precision switches on textile machinery. Whether you are a manufacturer of textile equipment or a mill operating man, it will pay you to investigate these extremely reliable, long-life, precision switches.

Illustrated are just two of thousands of practical uses to which MICRO SWITCH precision switches have been put in order to make textile machinery more automatic, more productive and safer.

On a dyeback machine a sealed limit switch is used as a door interlock. When the door of this cloth-dyeing machine is opened, the switch turns on the exhaust fan. Being sealed it is unaffected by regular washing down with a high pressure hose.

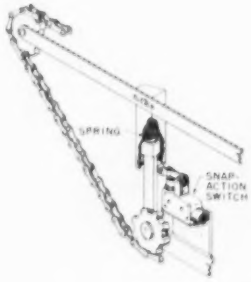
Well sealed to keep out lint and dirt, a MICRO SWITCH precision limit switch is used on the shipper rod of a spinning frame. The rod runs the length of the frame and the machine may be turned on or off by turning the shipper rod approximately 30 degrees. The limit switch is mounted at the end of the rod and is actuated when the rod is turned.

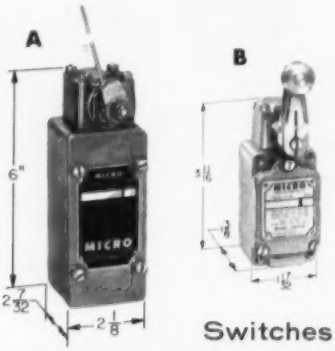
For complete information on switches for textile equipment contact the MICRO SWITCH distributor nearest you. Field engineering service is available for consultation at your nearest MICRO SWITCH branch office. Look under "Switches, electric" in the Yellow Pages.



This setup saves needles and time on knitting machines

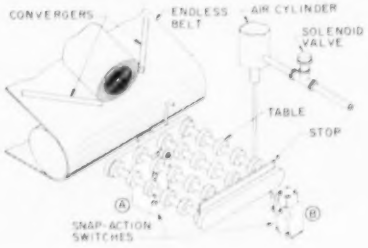
"We are using this setup on our knitting machines and it has saved us a lot of needles and time," a plant operator told us. The knitting machine has an electric stop motion. The MICRO SWITCH precision switch is used on the chain tightener brace so if the chain breaks or comes loose the machine will stop and not smash up. When the chain is tight, the switch arm is down. If the chain comes loose or breaks, the arm goes up and will ground the stop motion and stop the machine.





Switches automatically unload tied bundles of cloth

Bundles are centered on the conveyor by two convergers. Each bundle operates Switch A (long lever actuator) as it passes over the switch and on to a ball bearing table. The switch actuates a timing device which stops the conveyor and operates a solenoid air cylinder. The air cylinder tilts the table, dropping the bundle into a hand truck below. When the table returns to its normal position, it actuates small limit switch B which starts the conveyor again.

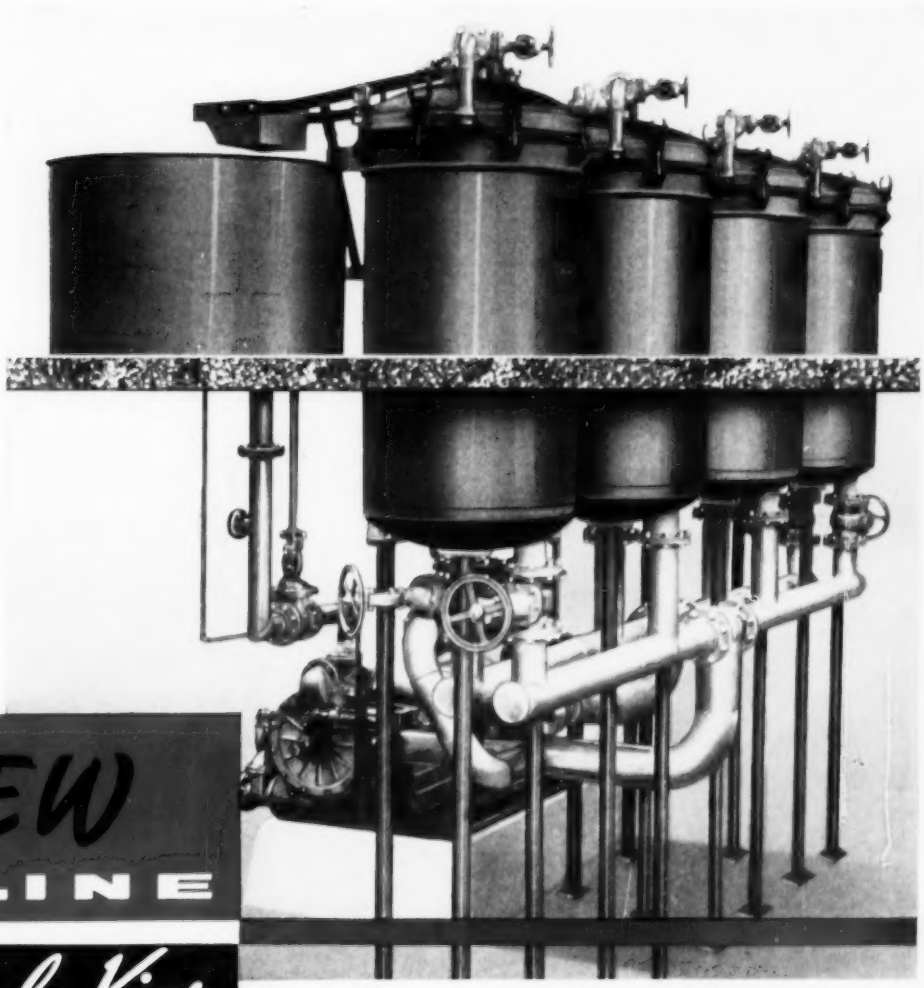


Send for Catalog 83 "Industrial Enclosed Switches."

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS



NEW IN-LINE Multiple Kier

Beam & Package Dyeing Machine

by SMITH DRUM

Provides More Efficient Performance

This new, simplified in-line design offers many advantages to the dyer of yarn in beams or in packages:

. . . It provides the same uniformity of dyeing as the famous SMITH-DRUM Cloverleaf machine, because all beams or carriers are dyed in the *same bath* under identical conditions of flow, pressure and temperature.
. . . It provides greater operating efficiency.
. . . It is designed for 75 p.s.i. working pressures at 300° F.
. . . It is more easily installed.
. . . It is available with 1, 2, 3 or 4 kiers.
. . . Machines can be inter-connected to handle 6 or 8 beams or yarn carriers.
. . . Shut-offs permit dyeing less than a full load.
. . . All pipe connections and flanges are American standard for complete inter-changeability.

For full details, write:

SMITH, DRUM & COMPANY
432 W. Allegheny Ave., Philadelphia 33, Pa.

Southern Sales Representatives: **PARROTT AND BALLENTINE**
510 South Carolina National Bank Bldg., Greenville, South Carolina

These Armstrong Accotex
PAT. NO. 2,450,408-9
PAT. NO. 2,470,599
RE. 23117
46 M.M. 1.273
Armstrong

Aprons are specially designed to give LONG, DEPENDABLE SERVICE ON MODERN HIGH-DRAFT FRAMES

The higher drafts and faster speeds on modern spinning frames make it more important than ever that aprons have the best possible abrasion resistance.

Many mills are getting up to six full years of continuous, trouble-free spinning with Armstrong Accotex® Aprons. In some cases, these aprons have spun top-quality yarn even longer.

This long service life makes possible the obvious savings that result from fewer apron changes. But in addition, the same qualities that give Accotex Aprons their long life also help to maintain good yarn control and reduce yarn irregularities.

Apron performance like this doesn't just happen. It's the result of rigorous testing and evaluation of the synthetic rubber compounds used in Armstrong Aprons.

One such test is run on the Armstrong-designed abrader, which is described below. Additional tests are used to make sure that the rubber compounds have the necessary resistance to oils, solvents, and ozone . . . and that they have optimum strength and flexibility.

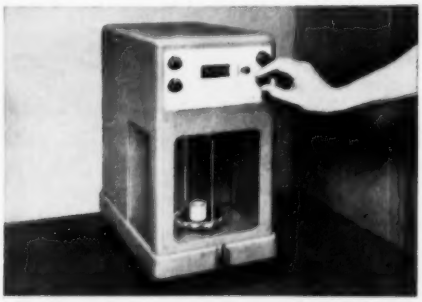
If you're not already using Accotex Aprons, ask your Armstrong man to arrange for a test frame next time he calls. You'll find there's an Accotex Apron specifically designed for your needs . . . no matter what you're spinning, no matter what type of equipment you're using.

For more information, write for your copy of our catalog, "Armstrong Textile Products." Address Armstrong Cork Company, Industrial Division, 6401 Ivy Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

SYNTHETIC RUBBER SAMPLES get rough treatment on this Armstrong-designed abrader. Samples are rotated against a moving belt of sandpaper. A few hours on this machine is the equivalent of years of mill service.

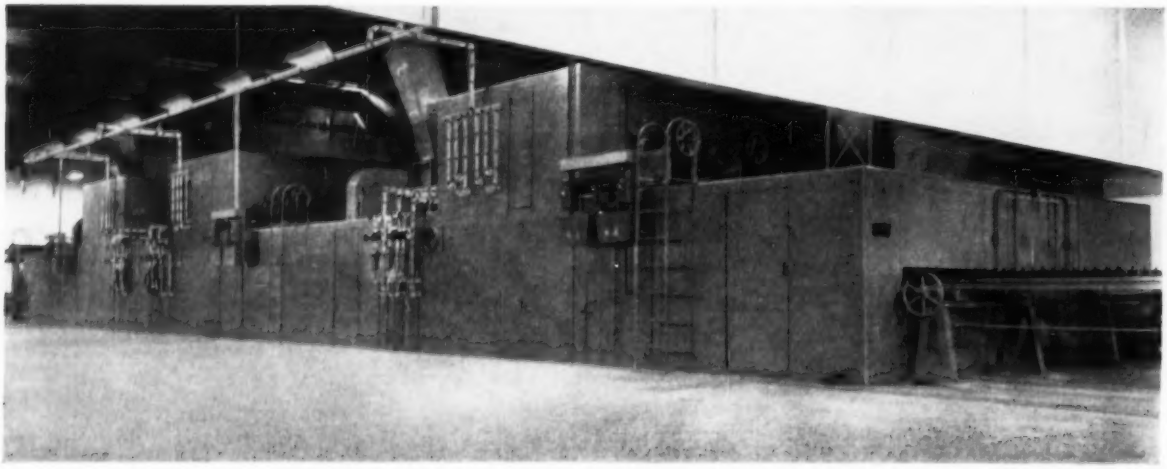


AFTER A FEW HOURS ON THE ABRADER, Accotex Apron compounds are carefully weighed on a sensitive balance. Low volume loss shows ability to resist the wear often caused by higher drafts.

Tenter Housing Output

UP 50 TO 150%!

Proctor's duplex air circulation is the answer



The reason why the Proctor Tenter Housing offers the greatest drying capacity per foot of length, lies in the careful design of Proctor's duplex air circulation system. It is the only system that gives absolute uniformity of drying or curing. User experience has actually proven output increases of up to 150% over conventional housings!

The Proctor air circulation system, with its accurate control, has another advantage too. It permits handling of the widest range of fabrics, with the assurance that each will receive exactly the correct treatment.

You cannot afford to overlook a machine that will pay for itself, out of savings, in two years, as shown in actual case histories. Ask for a Proctor engineer to go over your requirements, and judge for yourself the advantages to be gained by the use of this Tenter Housing.

PROCTOR EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR TUBULAR KNITS • EQUIPMENT FOR PRODUCING "REPMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

PROCTOR & SCHWARTZ, Inc.

PHILADELPHIA 20, PA.

Manufacturers of Textile Machinery and Industrial Drying Equipment

Proctor

One in a series to remind dyers and printers
that when fastness is the goal,
there's more than one way to achieve it.

"But, is the color fast?"

Show the gal a garment and even modesty won't curb her shopper's instinct. She insists on color fastness . . . but the *class of dye* is yours to decide.

The light-fast, wash-fast blue shown here, for instance, is produced by Azoene® Fast Blue BB Salt coupled with Naphthol AS. For all around fastness, rich, appealing color and low-cost production, this combination can't be beat.

No one class of dyestuffs has a monopoly on fastness. You can choose a dye that satisfies on *all* scores . . . economy, application *and* consumer satisfaction.

To upgrade your line at small increase; or to cut costs without lowering fastness standards . . . investigate Azoene Fast Color Salts, Bases, and Naphthols and Azogen® Printing Colors. Our representatives will be glad to help you analyze your next dyeing job.

bu ALLIANCE

BLACKMAN-UHLER CO., SPARTANBURG, S. C.
ALLIANCE COLOR & CHEMICAL CO., NEWARK, N. J.
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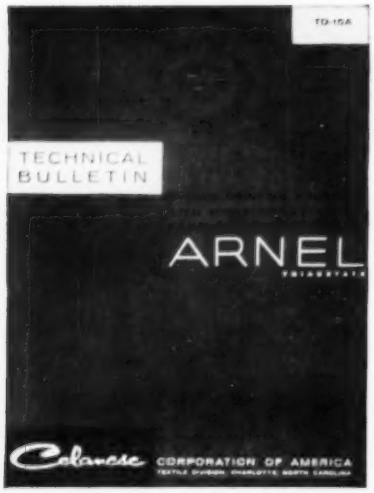

New Arnel Technical Bulletin Ready!

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latest commercial formulae and procedures!

up to the minute list of dyes!

experience with Azoic colors!

heat treatment results!

most important!

For Bulletin TD-15A, and other information on Arnel, contact Celanese Corporation of America, Box 1414, Charlotte, No. Carolina. Branch Offices: 180 Madison Ave., New York 16; 200 Boylston St., Newton, Mass.; 22 W. Madison St., Chicago 2. For export: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Ave., N. Y. 16.

This is the official Arnel symbol — evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

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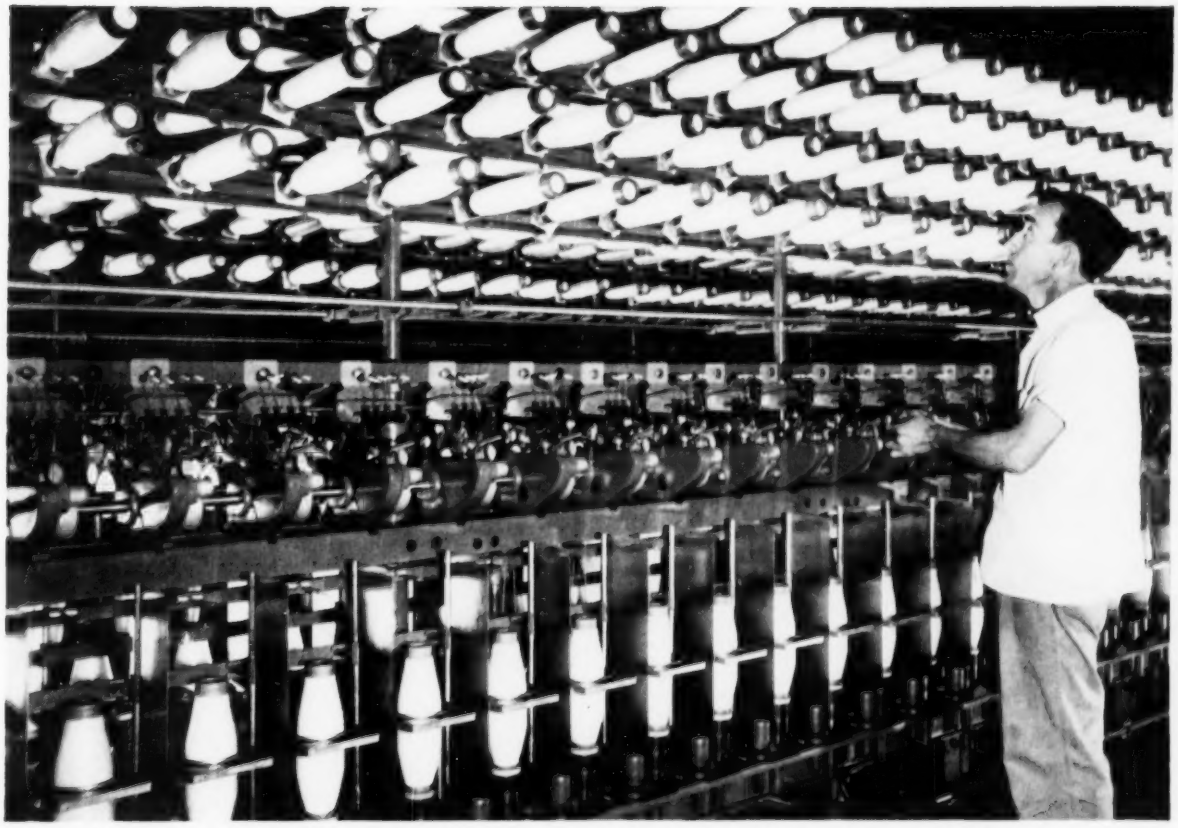

Leesona Model 10 Ring Twisters processing glass yarn at the Seguin, Texas, plant of the Coast Manufacturing and Supply Company. The firm produces Trevarno Glass Fabrics.

Producers of TREVARNO GLASS FABRICS chose Leesona Model 10 Ring Twisters

Years of research and planning went into the decision of Coast Manufacturing and Supply Company to enter the textile industry as processors and weavers of glass cloth. The 85-year-old Livermore, California, firm, with a long history in the manufacturing and distribution of safety fuse for the mining and construction industries, made the carefully-planned move into textiles in 1947.

Ralph E. Merritt, president of the firm, reports:

"After evaluating other types of twisting equipment, Coast Manufacturing and Supply Company decided upon the Leesona Model 10 Ring Twister."

Model 10's are used exclusively in Coast Manufacturing's 800-spindle twister installation in Seguin, Texas, producing a double-tapered package which can be used directly for filling and warping operations without rewinding.

Versatile Leesona Model 10's can also produce a tapered top or straight wind package. They are ideal for processing not only glass yarn, but rayon, spun rayon, nylon, silk, wool, worsted, cotton and combination yarns, and the new bulk and stretch yarns as well.

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Textile Industries
for January, 1957

News in Brief

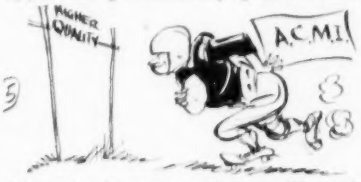
Spinners Must Plan Ahead. Members of the Carded Yarn Association were told of four steps which sales yarn mills must take to "stay ahead of the game and remain in business," in an address by H. K. Hallett, vice-president of the Kendall Co.: liaison (by technical engineers) between spinners and customers; product and market research conducted cooperatively by all concerned; computation of accurate costs for all yarn counts; and long range market, product, and financial planning. Since most of the mills involved are small, the services could be made available by yarn brokers through increased commissions, or by the industry's association through increased dues.

Textiles Exact Science. "Textile manufacturing is becoming an exact science," Marion Heiss, vice-president of Cone Mills, recently told the National Council of Textile Education. But to keep pace with other industries according to

Mr. Heiss, the industry must attract and train capable young men, expand its research programs, and wage more vigorous promotion and merchandising campaigns. [For more of what Mr. Heiss had to say, turn to page 113.—Eds]

NCC Aids Japanese Promotion. A member of the National Cotton Council's sales promotion staff has visited Japan to confer with Japanese cotton men on a program aimed at increasing consumption of Japanese cotton textiles in the Japanese home market. During the past year the Japanese cotton industry has held a Cotton Week and selected a "Miss Cotton," based on similar NCC promotions in the United States.

Improved Cotton ACMI Goal. The directors of the American Cotton Manufacturers Institute have approved preliminary plans for a



drive to improve the quality of cotton produced on American farms. Details of the program are to be worked out later.

Next Greenville Show. Dates for the 20th Southern Textile Exposition have been announced — October 6-10, 1958. The show will again be held in Textile Hall, Greenville, S. C.

Next Month

Purchasing at Dan River

Dan River Mills' acquisition of Iselin-Jefferson Co., Iselin-Jefferson Financial Co., Alabama Mills, and Anchor Rome Mills, and control of the majority of the stock of Woodside Mills was one of the highlights of the textile news in 1956.

Next month TEXTILE INDUSTRIES, as part of its Special Purchasing issue, will take a close look at Dan River's purchasing department, to see what it takes to provide 50,000 or so different items of supplies and equipment needed to keep this 579,000-spindle operation running.

This illustrated inside story of "Purchasing at Dan River Mills" will be of wide interest to mill men, whether or not they are connected with purchasing, and to suppliers. Watch for it in TI for February.

Uniform Optical Bleaches. The Chemnyle process for uniform dyeing of filament nylon with acid and direct dyes [see TEXTILE INDUSTRIES for Nov., 1956, p. 69] is also applicable to a number of optical bleaches, according to Walter H. Hindle, associate director of textile research for Chemstrand Corp.

Tufted Textile Facts. Shipments of tufted rugs and carpeting amounted to $110.4 million in the first half of 1956—down 6% from the previous half year, but up 5% over figures for the first half of 1955. Manufacturers of tufted products consumed 115.8 million pounds of yarns and fabrics of all types during the first half of 1956, according to a report by the Bureau of the Census.

"Wash 'n' Wear" Meeting. The Textile Section of the New York Board of Trade will sponsor an industry-wide symposium on minimum care fabrics problems, from weaving through finishing to the consumer, next spring. Time and place will be announced later.

Women Use More Wool. Retail sales of wool piece goods rose 4% during the first eight months of

1956, compared to the same period of 1955, while synthetics increased 1% and cotton dropped 3%, according to the Wool Bureau.

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Beechcraft airfleet of the textile industry

Textile Men Educate Medics. J. P. Stevens, Jr., chairman of the Textile Committee, National Fund for Medical Education, has set

three goals for his committee: renewal of all gifts and establishment of such gifts on an annual basis, contribution from all sponsors' companies, and gifts from as many textile companies as possible.

Italian Shuttleless Loom. The Italian Gentilini-Ripamonti loom is said to eliminate shuttles, harnesses, and reed. The filling is inserted by "sheaths" from 2-lb spools, up to 20 of which may be used; pick-and-pick effects can be obtained in up to 20 colors. Leno selvages are produced. Reported speeds (fabric widths not given): hemp and jute, 11 ppi, 500-750 ppm; cotton, 40-60 ppi, 900 ppm; wool, 40-50 ppi, 500 ppm.

Import Problems in Canada. "The speed with which Japanese producers can move in on a Canadian industry is astonishing . . . In 1954 imports of all kinds of knitted outerwear from Japan amounted to only 1,473 pounds. In 1955 the figure was 198,321 pounds, and in only the first five months of this year had jumped to 446,802 pounds, and it is estimated that about 80 per cent of these knitted outerwear imports

News in Brief

are T-shirts and cotton jerseys. . . there is every indication that Japan plans, as a matter of policy, to take over much larger sections of the Canadian market for textiles and textile products."—*J. L. Heon, president, Canadian Woollen & Knit Goods Manufacturers Association.*

Textile Executives Well Paid. Top executives in textile firms got above-average pay raises in 1955, reports McKinsey & Co., management consultants. Increases for textile company presidents averaged 8.2%, compared with 6.3% for industry in general. Their pay varied

---

Says $1 Minimum Speeded the Race for Survival of the Fittest

"The new federal minimum wage of one dollar ($1.00) per hour, which went into effect on March 1, 1956, speeded up the race for survival of the fittest that has been taking place in the spinning and weaving branch of the textile industry for quite some years," Carl R. Harris, vice-president of Erwin Mills, Inc., declared recently in an address before the Central West Garment Association.

Mr. Harris, who represented the textile industry at the Conference, was asked to give answers to three questions:

(1) What are the effects of the new minimum wage?

(2) Has it increased costs?

(3) Has it increased wages for those who already received more than one dollar per hour?

In answering the first question, Mr. Harris concluded, "The greatest effect of the new minimum wage will be to force the marginal mills to modernize their equipment, become more efficient, and produce at a lower cost or else we will see quite a further liquidation in active spindles."

He said, in replying to the second question: "This question must be answered emphatically in the affirmative. Wages in the weaving segment of the textile industry represent from twenty-five to thirty per cent of total manufacturing costs. Therefore, there can be no question about the new minimum having increased costs."

The final question can also be

Carl Harris of Erwin Mills

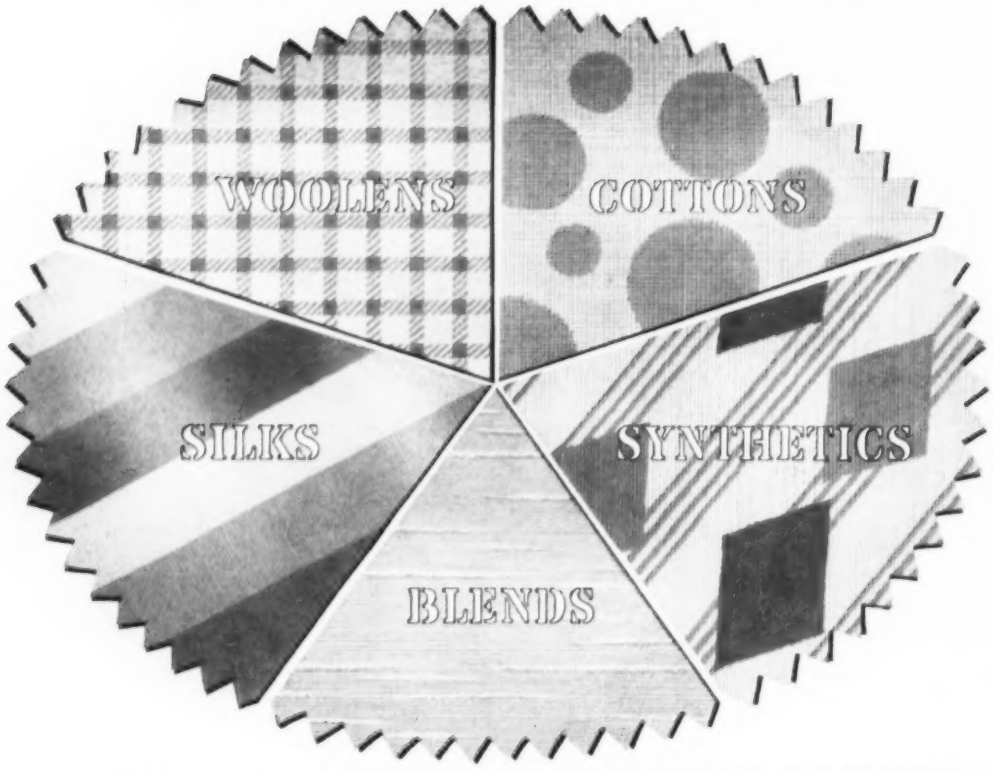
answered in the affirmative, Mr. Harris said. "It is just not thinkable that it would have required an overall average nine cents (9¢) increase to bring only those below the minimum up to it. Furthermore, common sense would dictate that, if that much of an increase was put into effect without the skilled employees receiving above one dollar ($1.00) getting any advantage from it, a chaotic condition would have resulted."

In closing his address, Mr. Harris told the garment manufacturers: "The textile industry has accomplished a most outstanding and wonderful job which has been materially to your advantage and that of your customers. It has performed feats of efficiency in operation of which no one ever dreamed. It has increased the earnings of its employees between sixty and seventy per cent, and at the same time it is selling you goods at about the same prices of a decade ago.

"It does not seem possible that any industry could make such strides in increasing efficiency and reducing costs sufficiently to enable it to pass on to you goods at no greater increase in price over this period. The improvements in equipment and efficiencies made in operations, while they have been stupendous, have not taken care of all of this. Actually, the records show that the industry has dipped heavily into profits in order to accomplish such a great feat. The average net rate of return on sales during this period has been considerably reduced and is now down to a dangerously low point, if we expect to maintain a stable industry.

"The textile industry cannot absorb much more added costs and still continue to stay in business. In other words, our industry passed the position the steel industry claims to be in — that when wages or other costs increase, prices have to be increased. Textiles have reached the point where, if costs are increased, they will simply have to be passed on to their customers if they expect to stay solvent."

No Matter What The Material . . .



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with sales and profits; average pay for president of a textile company with sales of $30 million was $53,000; $100 million sales, $92,000; and $500 million companies gave their chief executive $192,000—the highest average salary for any industry at this volume.

Court Prohibits Handbills. An employer may bar distribution of union literature by nonemployee union organizers in company parking lots, the Supreme Court held recently in upsetting a decision of

the Court of Appeals for the Sixth Circuit, which had termed such distribution "protected activity" in sustaining a National Labor Relations Board order [see TEXTILE INDUSTRIES for September, 1955, p. 103].

Armed Forces Wool Consumption. The U. S. Department of Agriculture is now issuing quarterly estimates of the amount of wool textiles delivered to the armed forces. The following are the first figures released, given in thousands of pounds of wool, clean basis, estimated to have been used in the wool textiles delivered:

1954	
July-September	291
October-December	285
1955	
January-March	424
April-June	3,321
July-September	2,835
October-December	1,932
1956	
January-March	1,231

AF Releases Parachute Data. Two reports of research conducted on parachute materials have been released through the Office of Technical Services. "Study of the Effect of Twist in Yarns on Parachute Fabrics," PB 121193, by members of the staff of Fabric Research Laboratories, Inc., is a 365-page study of the effect of twist on air permeability. Price: $5.50. "Evaluation of Fabric Finishes for High Temperature Operation of Parachute Ribbons," PB 121197, by L. C. Block of Lowell Technological Institute, is a 52-page report on ribbon-type parachutes for high-altitude rockets. Price: $1.50. Both are available from OTS, U. S. Department of Commerce, Washington 25, D. C.

Slater Mill Popular. The Old Slater Mill, Pawtucket, R. I., America's first textile mill, drew 3,083 visitors in 1956, up nearly a third over 1955.

TRI Fellows Get Raise. First- and second-year Textile Research Institute Fellows at Princeton University have had their annual stipend raised from $1,200 to $1,500. Stipend for third-year fellows remains unchanged at $1,800. Fellowships include tuition and fees in addition to the stipend.

Velveteen Tariff Hike Asked. The U. S. Tariff Commission in its

News in Brief

"escape clause" report on velveteen imports has found unanimously that such imports have contributed substantially to the serious injury of the domestic industry. The Commission recommended that the tariff on plain-back velveteens be raised to 46⅞% ad valorem from the current 25%, and that rates on twill-backs be raised to 56¼% ad valorem from the current 25 cents per square yard (not less than 22½% nor more than 30% ad valorem). The recommendation has gone to President Eisenhower, but at this writing no action had been taken.

Textile Maintenance. A conference on "Maintenance in Textile

MERCHANDISING NOTES

Callaway Mills have introduced the new heavy-denier carpet type Chromspun solution dyed acetate filament in two tweed-style carpets.

Celanese Corp. of America is conducting a "Piece Goods Workshop" at its New York showroom, through January 18, to assist retailers in promoting over-the-counter fabrics.

Alamac Knitting Mills acted as technical consultant to the Kaiser Aluminum Co. in its recent TV production of "The Rag Jungle," a

story of racketeering in the New York garment district.

James Lees & Sons Co. reports satisfactory installation of wall-to-wall carpeting in the kitchen of a Milwaukee home.

"Shetland" has been approved by Shetland Islanders as a trade mark for woven and knitted wool goods made in the Shetlands, and will be supported by the Highlands and Islands Advisory Council.

U. S. Rubber Co. has supplied vinyl-coated nylon fabric for construction of a portable store by Polk Bros., Chicago appliance dealers. The air-inflated store, called Port-A-Mart, is 108 feet

long, 50 feet wide, and 30 feet high. It rests on a coated fabric tube containing 30,000 pounds of water. The store itself weighs 500 pounds, and is used as a building for "special events" merchandising.

Vat Dye Institute has instituted a promotional campaign aimed at acquainting converters, ready-to-

wear and home furnishings manufacturers, retailers, and consumers with the fastness properties of vat dyes.

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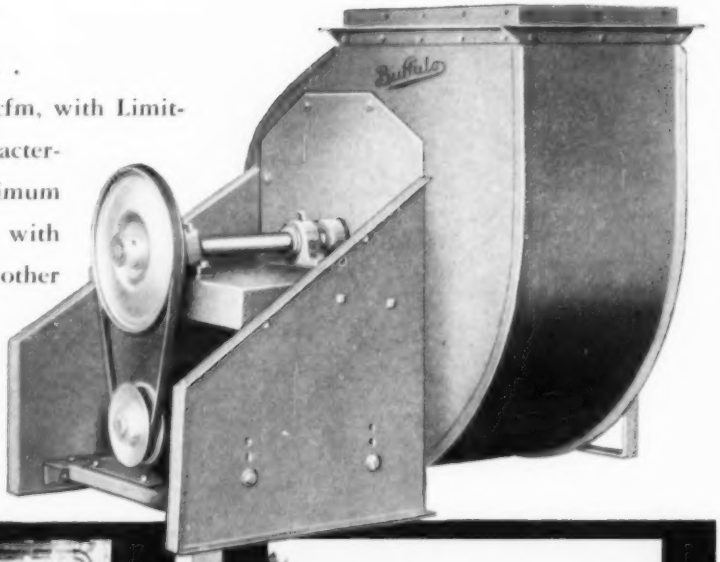
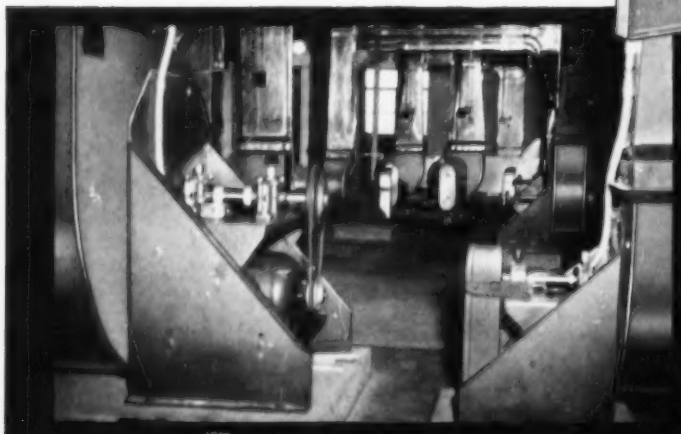
in capacities from 500 to 20,000 cfm, with Limit-Load (R) non-overloading characteristic and inlet guide vanes for minimum noise and turbulence. Available with all-weather drive cover for roof or other outdoor installation. *Write for Bulletin 3720.*





Multiple unit installations like this provide flexibility with economy.

Roof installation with All-Weather Drive Covers.

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For further information use Handy Return Card, Page 187

Mills" will be held on January 29, in conjunction with the 8th Plant Maintenance & Engineering Show, scheduled to run from January 28 to 31 in Cleveland's Public Auditorium. Conference chairman is W. H. Godshall, plant engineer for International Latex Corp.

Japanese Aid to India. A group of Japanese textile machinery men is visiting India to study the possibility of Japanese technical and financial assistance in establishing an Indian textile machinery industry.

Southeast Tops in Finishing. The four southeastern states of Alabama, Georgia, and the Carolinas produced 4.35 billion linear yards of finished cotton woven goods in 1955, more than half of the 8.10 billion yard U. S. total. South Carolina's finishing plants topped

The Sales Outlook for Textiles in 1957

by Allyn B. McIntire
Vice-President
Pepperell Mfg. Co.
Boston, Mass.
*Extract**

When we consider the outlook for total textile sales in precisely those terms, there seems to be justification for optimism — yet I hasten to add that insofar as sales of goods manufactured by American mills are concerned, the outlook is decidedly questionable.

First, as to the total textile business to be transacted in this country during 1957, the prospect looks healthy. . . . . We know now that the nation has reached the dimensions of a $400 billion economy. Along with the increase in value of gross national product, personal income has continued to rise. We are experiencing a very sharp population increase. All these factors are bound to mean greater demand and greater sales for textiles. . . . .

In preparation for the anticipated sales expansion, the textile industry has spent nearly two billion dollars on new plant and equipment during the last five years. A major portion of these expenditures has gone into improvement and replacement of machinery.

We are now emphasizing research and development, although not to the extent that many of us would prefer and would be willing to undertake provided the long-range future were more certain. Recent surveys indicate that the textile industry expects 13 per cent of its total sales by 1959 to be new product sales. This compares with about an 11 per cent new product expectation for all manufacturing industries.

Our expenditures on research and development have increased from 28 million dollars in 1953 to an estimated 34 million in 1956. Let me be

Allyn McIntire of Pepperell

the first to agree that these amounts seem all too small in comparison with our industry's current total sales, but once again, there is good reason for this situation.

Another interesting indication of our forward planning to meet the expected expansion in sales is found in our research personnel. Of 5900 scientists and engineers in the textile and apparel industry, about 1700 are engaged in research and developmental work. More than half of these are engineers, but research chemists represent about 33 per cent, according to a recent National Science Foundation Survey. This is significant, because without question it is in the chemistries of finishing and coloring that the next big technological strides in textiles will take place.

It may well be said that the textile industry is just crossing the threshold into a new era, where chemical impregnations and surface treatments will match the contributions of modern spinning and automatic weaving in producing fashion fabrics of a finish, appearance, and performance to meet every consumer want. . . . .

What bothers me and many of my colleagues throughout the industry is the question: How much will the domestic textile industry be able to participate in the sales expansion we foresee?

Many of us in the textile business feel we have every right to share in the expansion. I refer particularly to those of us who have developed brand names, stimulated consumer interest in quality merchandise through effective promotional techniques, and who have done our level best to produce goods that measure up to high American standards of quality and satisfaction. We feel that efforts of this kind have contributed in a large way to making the American domestic market for textiles the biggest and most desirable in the world. Naturally, having done so much to create this market, we would like to share in its growth.

Let me state very bluntly, however, that our entire industry has serious doubts as to how much of that market it can retain — to say nothing of wondering whether we can participate in its future expansion. We say this because we are in an impossible and untenable position relative to foreign competition — not only in the export markets of the world, but right here in our home markets. . . . .

We are convinced that once the United States takes a course of bona fide reciprocity, of genuine and contractual give-and-take trade relationships by means of firm, enforceable treaty agreements with individual countries throughout the world, great new horizons of textile consumption will be opened up. Then, and not until then, will the domestic industry be able to move forward in pace with the economic expansion of this nation and the Free World.

*Extract of address by Mr. McIntire before the National Industrial Conference Board.

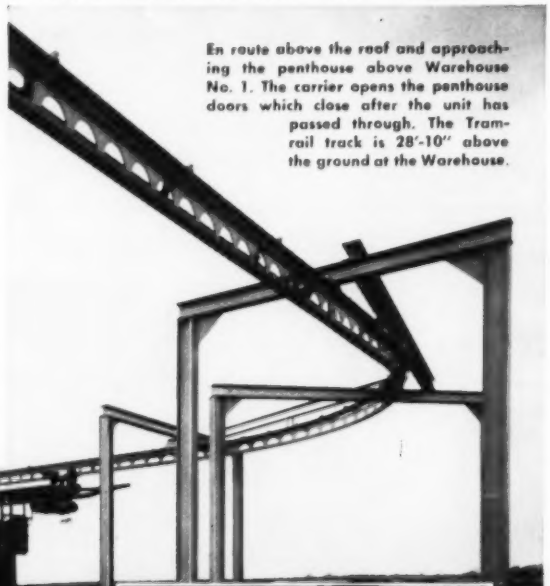
Uses Roof To Link Distant Departments

Automatic Tramrail System Saves "240 Man-Hours" Per Week

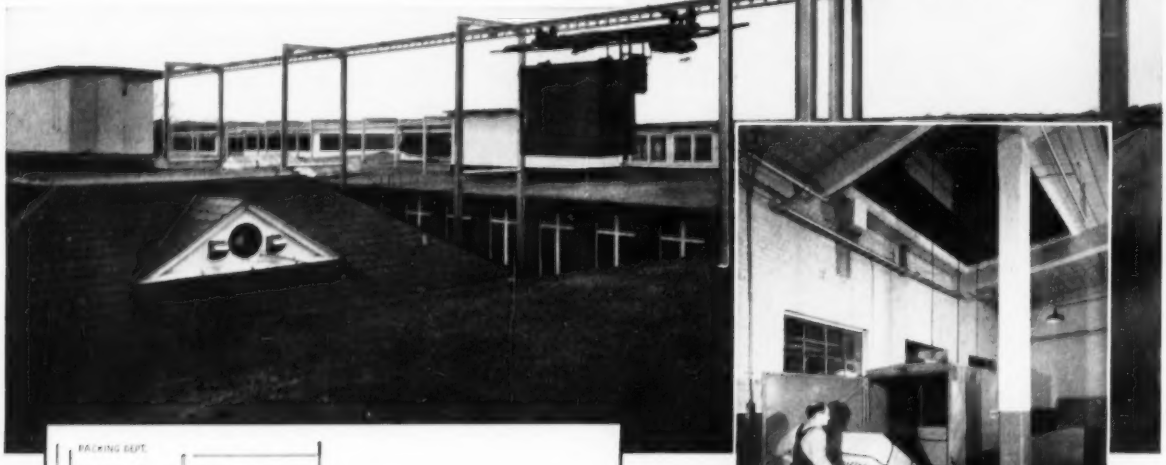
By installing a Cleveland Tramrail automatic dispatch system that extends partly over roof tops and partly between buildings, the North Carolina Finishing Co., Salisbury, N. C., was able to successfully link two widely separated departments and secure the same advantages that would be obtained if they were adjacent to each other.

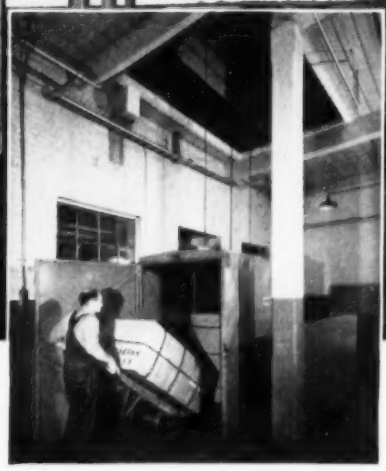
This system has been in operation since 1949. It is an excellent example of the application of a bit of imagination to overcome an awkward and costly materials handling situation. It reduces the time for movement of packaged rayon cloth from the Packing Department to the No. 1 Warehouse by 240 man-hours per week.

A wide variety of Cleveland Tramrail automatic dispatch systems is now serving industry. For real savings we suggest that you get the facts on this modern method of handling materials.

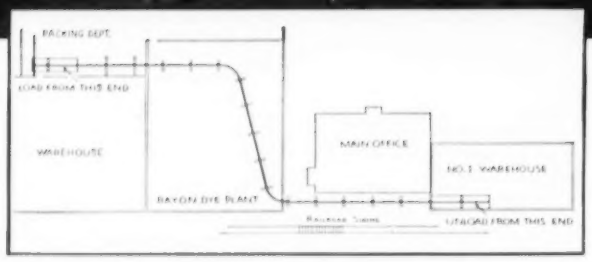


En route above the roof and approaching the penthouse above Warehouse No. 1. The carrier opens the penthouse doors which close after the unit has passed through. The Tramrail track is 28'-10" above the ground at the Warehouse.





6 to 8 cartons weighing 100 to 400 lbs. each are loaded into the Tramrail freight van. The button on wall, at left, sends the van on its way, first upward through ceiling opening, and then forward on outside roof track. The van measures 4'-0" x 8'-0" x 6'-6" high.



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CLEVELAND TRAMRAIL
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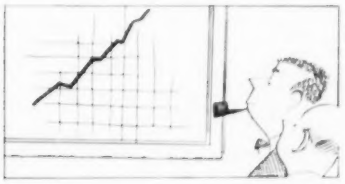
the list, with an output of 2.31 billion yards, reports the Bureau of the Census.

Dyestuffs Production. According to the U. S. Tariff Commission, production of coal tar dyes in this country totaled 167,472,000 pounds in 1955. Production of major classes was as follows (in thousands of pounds):

Azo	59,689
Anthraquinone vat	39,409
Sulfur	25,572
Indigoid-thioindigoid	15,779
Anthraquinone	5,693
Tri- and diphenylnaphthylmethane	5,598
Stilbene	4,377
Pyrazolone	1,417

Total sales were $180 million, for an average value of about $1.16 per pound.

Wool Promotion Successful. Credit for the 12% increase in per capita consumption of wool during the last two years can be attributed to the wool advertising campaign begun in the fall of 1954, according to Max F. Schmitt, president of the Wool Bureau.



Label Imports, Says JCLTAI. Congressional action is called for to remedy the Federal Trade Commission's failure to require country-of-origin labeling on imports, says the Joint Committee on Labeling of Textile and Apparel Imports, whose membership is made up of textile and garment manufacturers' associations.

Textiles in LA. A survey of the opportunities for the establishment of Los Angeles as a cotton textile mill center will be made by the firm of Fessenden Blanchard & Morrell for the Mayor's Committee for the Development of the Textile and Apparel Industry. The survey will be conducted under the supervision of Douglas G. Woolf.

Few Textile Degrees. The Engineering Manpower Commission estimates that 34,500 Engineering Bachelor Degrees will be granted in the 1956-57 school year, but that only 150 of these will be in textiles.

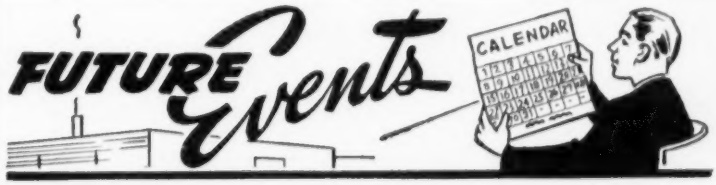
Uniform Gets Name. The Army's new green service uniform, optional for off-duty wear, is now officially "Army Green," although it will continue to be designated as "AG-44" in specifications.

UTWA Seeks $2 Wage. Raising of textile operatives' pay to $2 an hour, on a par with the auto and steel industries, was the goal announced by Anthony Valente on his reelection as president of the United Textile Workers of America.

USDA Swaps Wool. The U. S. Department of Agriculture plans to barter $15 million worth of wool for Turkish metallurgical grade chrome ore meeting National Stockpile specifications.

News in Brief

Future Events



Date		Event	Location
Jan.	7-9	American Management Association Seminar	Biltmore Hotel Atlanta, Ga.
	23	New York Section AATCC luncheon symposium	Hotel Delmonico New York City
	28-29	National Cotton Council annual meeting	St. Louis, Mo.
	28-31	Plant Maintenance & Engineering Show	Public Auditorium Cleveland, Ohio
Feb.	16	Mid-West Section AATCC	Hotel Bismarck Chicago, Ill.
	25-27	Textile Quality Control Conference	Georgia Tech Atlanta, Ga.
	27-28	Cotton Research Clinic, sponsored by National Cotton Council	Gen. Oglethorpe Savannah, Ga.
Mar.	14	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
	28-29	Textile Quality Control Association	Clemson House Clemson, S. C.
Apr.	4-6	American Cotton Manufacturers Institute annual meeting	Biltmore Hotel Palm Beach, Fla.
	10-12	Alabama Cotton Manufacturers Association annual convention	Buena Vista Biloxi, Miss.
	23-24	National Knitted Outerwear Association annual meeting	Waldorf Astoria New York City
	24-25	ACMI Cotton Fiber Testing Laboratory Open House	The Clemson House Clemson, S. C.
	25-27	Phi Psi Textile Fraternity annual meeting	New Bedford Hotel New Bedford, Mass.
	29	Underwear Institute annual meeting	Traymore Hotel Atlantic City, N. J.
29	May 3	Knitting Arts Exhibition	Auditorium Atlantic City, N. J.
May	1-2	Fiber Society spring meeting	Clemson House Clemson, S. C.
	1-4	Cotton Manufacturers Association of Georgia annual convention	Emerald Beach Hotel Nassau, Bahamas
Sept.	4-6	Fiber Society meeting jointly with members of Textile Institute	Hotel Statler Boston, Mass.
	26-27	Combed Yarn Spinners Association annual meeting	The Cloister Sea Island, Ga.
Oct.	2-3	Chemical Finishing Conference	Hotel Statler Washington, D. C.
Nov.	14-16	AATCC National Convention	Hotel Statler Boston, Mass.

This man helps move 175 carloads of caustic at a time

(He's a deck officer on the Marine Dow-Chem)

After a few terse commands from the bridge, the 18,000-ton *Marine Dow-Chem* glides silently into the night. With her cargo of vital chemicals the *Dow-Chem* plies her way to key Dow terminals. In her storage tanks there is enough caustic soda to fill 175 tank cars.

Typical of the foresighted Dow attitude of solving a problem before it arises, the *Dow-Chem* was commissioned in 1954 with an eye to the future needs of industry. Today, this specially equipped ship is an important part of our vast distribution system.

As demand increases, Dow will continue to lead the way in developing new methods to deliver caustic soda to your doorstep in any form or quantity. THE DOW CHEMICAL COMPANY, Midland, Mich., Dept. AL 600F.

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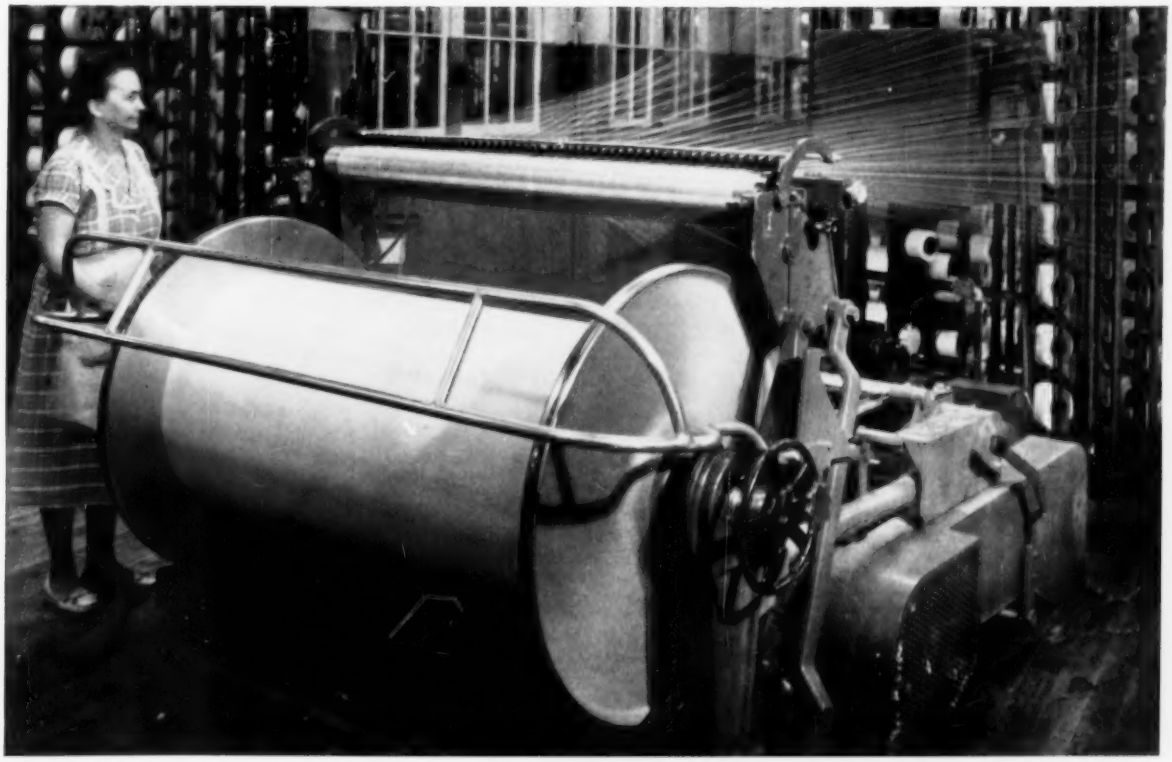

Picture by courtesy of Laurens Mills, for whom Deering, Milliken is selling agent.

HAYES giant beam improves efficiency for cotton mills

Here is the new giant 38" x 54½" Aluminum Section Beam for cotton and spuns! This beam, for the first time in the textile industry, is now going into leading cotton mills to *improve their efficiency, cut costs,* and *increase profits.* One of these 38" beams does the work of two 28" beams, — saving one-half the handling time.

LIGHTWEIGHT—207 lbs.

CAPACITY—Net weight of yarn 1050 lbs.

SMOOTH and TRUE-RUNNING — No splintering, no distortion due to atmospheric changes, throughout the life of the beam. Insures better warps.

BALANCE—Beam is balanced at Hayes Industries to run up to 1000 yards per minute without objectionable vibration.

REDUCES COST—You *handle* half as many beams for the same production. Simple assembly for low maintenance cost should damage ever occur. Beams shipped knocked down to reduce shipping costs and storage space.

ADAPTABILITY—Fits all current types of warpers.

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THE WORLD'S LARGEST PRODUCER OF LIGHT METAL BEAMS

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HAYES INDUSTRIES, INC., Jackson, Michigan

( ) Please quote prices and deliveries.
( ) Have representative call to give me data on the 38" beam.
I would specially like to know

.....

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Name .....
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Company .....
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AN EXECUTIVE *Views*
THE NEWS IN TEXTILES

"The dirtiest package in the world"

COTTON has lost its preeminence in many fields during the last twenty years, but there is one characteristic in which it has no competitors—cotton is without a shadow of a doubt the most poorly packaged of all commercial products.

This is not news, of course. The U. S. Department of Agriculture in an 1896 publication said, "Taken altogether it is generally admitted that the American bale is the clumsiest, dirtiest, most expensive and most wasteful package in which cotton, or in fact any commodity of like value, is anywhere put up. It has no friends either among manufacturers, buyers, shippers, insurers, or producers."

In 1956 the situation has not changed. Not that attempts to improve the cotton bale haven't been made—they have. Admittedly, it is difficult to find as economical a package as the standard jute bale, but the major stumbling block has been opposition from within the cotton industry itself, rather than finding an economical yet satisfactory substitute for jute.

As the National Cotton Council delicately phrased it in a recent publication, " . . . several deep-rooted customs in the industry are tending to hold back packaging improvement. . . "

More plainly phrased, these are the principal objections to a better cotton bale:

1. Cotton buyers are a cautious

Here is the way cotton and rayon are received at the mill. Can there be any doubt of their identity, or of which will be contaminated?

group, addicted to removing samples from cotton bales on the slightest provocation. Since it is one of the rules of the game that no two samples may be removed from the same place, bales are slashed open at as many different spots as there are samples taken from them. Hence the disheveled appearance of the bale when it reaches the mill.

The cautious nature of the buyer also creates strong opposition to a certifying system, by which bales would be classed and permanently marked at the gin.

There is available an attachment for the gin condensor which takes small samples at regular intervals; these are combined to make a composite sample representative of the whole bale. The sample is attached in a separate package to the outside of the bale. The objection raised is that the sample is easily lost.

It seems to us that if the sample is lost, the bale could then be slashed open. At least we would have gained ground where the sample *wasn't* lost.

2. The tare of a standard cotton bale is 21 or 24 pounds, depending on density. Some farmers no doubt naively believe that they are getting cotton prices for jute; however, the chief opposition comes from cotton men, who, while agreeing that the standard tare could undoubtedly be reduced if a lighter weight bale covering were adopted, feel that there would be too much confusion during the transition period, when two standard tare weights would be in use.

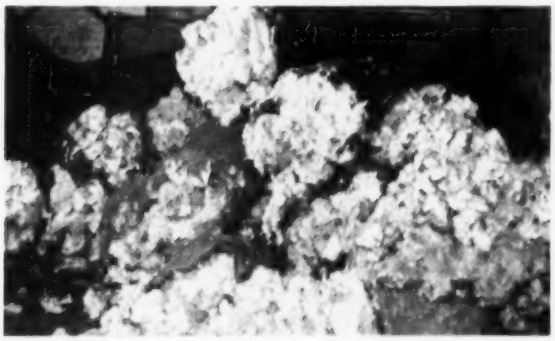
A possible solution is net weight trading, now the method for export sales.

3. Strong opposition to any change in baling procedures comes from the compress man and from the many warehousemen who also operate compresses. Since a program for improving the bale package logically includes elimination of the compress man by compressing to standard density right at the gin, the reason for this opposition is obvious.

The National Cotton Council is now making the most determined effort yet to improve the packaging of the cotton bale, despite the opposition of some of its own members. Some of the new materials being tried include burlap laminated with polyethylene film, nonwoven fabrics, X-crepe paper, and plastic films by themselves. From 10,000 to 12,000 bales were to be experimentally wrapped during the 1956 harvesting season.

If there is any doubt of the need for an improved cotton bale covering, we think that it should be dispelled by the accompanying photographs.

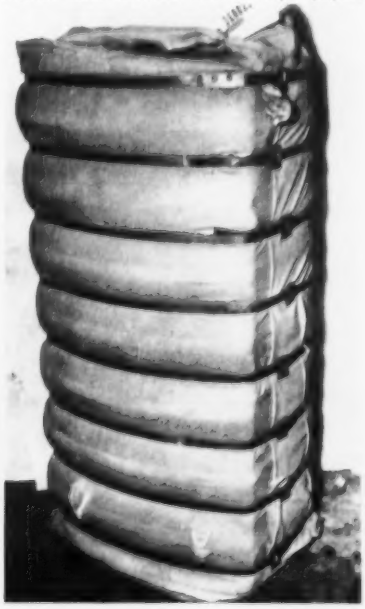
In only a week as much as two bales of waste are blown and picked from damaged cotton bales at one M. Lowenstein & Sons' plant.



Cardboard boxes in which rayon is received are discarded; jute bagging is reused to cover—and contaminate—other cotton bales.

Rayon staple stays in its package in the opening room; cotton bales in the background may be further contaminated before they reach the blending feeders.

What a cotton bale *could* look like—experimental bale covered with X-crepe paper.



★ PERKINS BATCH COUNTER ★

New Versatile Electro-Mechanical Counter for Continuous Production Machinery ... *Eliminates human error*

Use it on your automatic winders. It registers the exact total yards in each batch and retains the total until the operator can record it. Each batch is measured from its exact beginning to its exact end. The total production for a day or shift is also registered. Use it for counting the pieces going into lots where the weight or the size of a container limits the lots. The action that separates the lots also separates the count. Each lot total is retained while the next lot is being counted. This versatile batch counter will count any kind of material, being separated into lots or batches, by an electric impulse.

B. F. PERKINS & SON, INC.
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FOR THIS HELPFUL INFORMATION

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UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

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10 PROVEN WAYS
HYCAR LATEX
IMPROVES TEXTILE PRODUCTS

Textile manufacturers and converters are using Hycar Latex in a wide variety of applications to make their products better in many ways . . . to increase wear resistance, reduce crocking, improve wrinkle resistance. The list gives many more. For complete information on how Hycar Latex can upgrade your textile products, please write Dept. 2T-1, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Improves abrasion resistance Hycar used as a permanent warp size for cotton provides permanent abrasion resistance during weaving—adds wear resistance and color fastness to the finished fabric.

Adds seam strength Hycar used as a permanent warp size with starch greatly increases seam strength of rayon.

Provides better hand Hycar, used as an after-treatment on cotton, improves wearing qualities—provides a better, fuller hand.

Prevents fiber deterioration Hycar blended with melamine or urea-formaldehyde resins prevents deterioration of rayon and cotton fibers when large amounts of U-F resins are used for crease and wrinkle resistance.

Reduces crocking Hycar used as a finishing agent for cotton and wool reduces both wet and dry crocking—particularly with red naphthol dyes.

Binds color better Hycar latices are used to bind pigments for coloring or printing rayon and cotton fabrics. Easy to use, their tight adhesion to the fabric assures long life, good color retention.

Superior carrier for specialty active agents Hycar latices are excellent binders for specialty active agents for cotton—such as fungicides, zinc salts and flame-proofing agents.

Improves water resistance Hycar latices are superior binders for waxes and metallic salts used for conventional stain resistance and water repellency treatments for cotton.

Perfect binder for non-woven fabrics Hycar latices provide strength and character to non-woven or bonded cotton, rayon and nylon fabrics—supply high tensile and tear strength.

Tops as tie coat Hycar latices are excellent as tie coat for vinyl plastisol adhesion to rayon, cotton and nylon fabrics.

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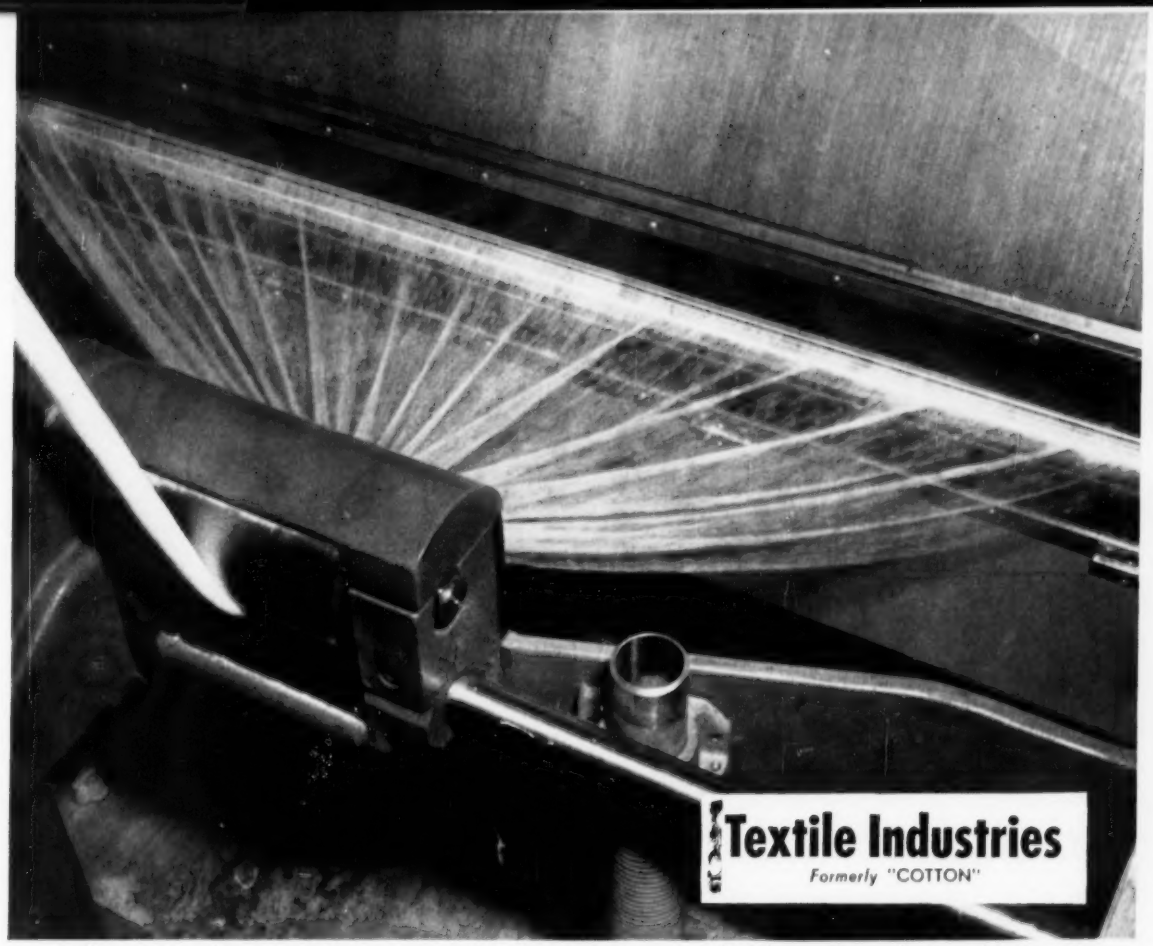
B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors



Doffer comb is replaced by rolls on new card web take-off device. Clearers are shown here resting on the top and bottom rolls.

DOFFER COMBS ELIMINATED

and vacuum stripping made semiautomatic at Parkdale Mills—sliver evenness up 16 2/3%

Staff prepared Exclusive

PARKDALE Mills, Inc., Gastonia, N. C., has equipped 56 new cards with a sliver take-off device which completely replaces the reciprocating doffer comb. Slivers from standard cards at this mill show about 12% NU on the Uster tester; the new take-off cut the figure to 10%—a reduction of 16 2/3%.

The device includes two driven metal rolls of different sizes, running together. The top roll is slightly smaller than the bottom roll, but the surface speeds of both rolls are the same. Metal clearer covers run in contact with both rolls.

The rolls revolve at about 53 feet per minute surface speed and are about one inch in diameter. The web coming off the doffer appears smoother than those on adjacent cards not utilizing this system. These cards are running SM Memphis Territory cotton.

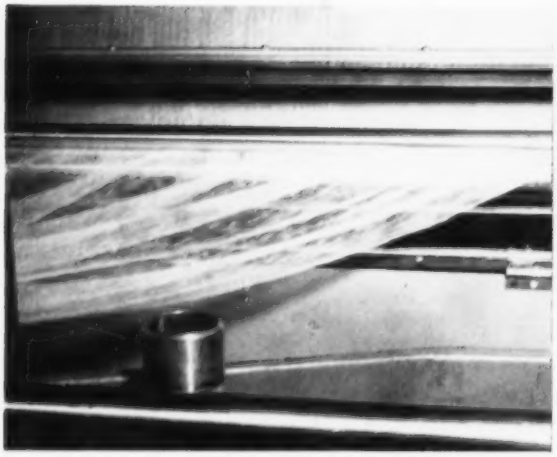
The device operates in conjunction with a semiautomatic vacuum stripping system. The operator opens the valve for the stripper, and pushes the nozzles to starting position; the doffing rolls and calender rolls are then automatically stopped and the gear box engaged after the operator throws out the feed.

Operation is then automatic. After stripping, the valve is closed, a timing mechanism restarts the doffing and calender rolls and disengages the gear box, and a uniform piece-up is made.

At Parkdale, all oiling is eliminated in the vicinity of the web, and there is no oil to get on card parts and from there into the stock.

Oil consumption has been drastically reduced, and cleaning is much easier because there is no oil thrown out of oil reservoirs or bearing areas onto the sides of the card.

A spokesman for the mill states that purchase of used cards was considered, but that good used



Take-off device with clearers partially retracted from rolls. Pipe in foreground is for automatic vacuum stripper installed with Rolaslivup.

Parkdale Mills have 56 new cards equipped with the automatic take-off device; each card also has a semiautomatic vacuum stripper.

cards were not available at a reasonable price. New Saco-Lowell cards were purchased because there was so little difference between the price of entirely new cards and the price of old cards in doubtful condition.

When the new cards were bought, the mill stipulated that the comb box and the comb blade be left off. This omission cut the card price by approximately the amount required to buy the new doffing and feed throw-in device. The device was supplied by Abington Textile Machinery Works, North Abington, Mass., and is called the "Rolaslivup."

Do You Know Reserve Forces Act provisions, Mr. Executive?

■ TEXTILE mill executives may learn to what extent their companies are affected by the "Reserve Forces Act of 1955" and by the earlier Acts which it amended, by studying the review and summary of the highlights prepared by the National Association of Manufacturers.

NAM Director, *Thomas O. Moore*, vice-president and general counsel of the P. H. Hanes Knitting Company and chairman of the NAM Industrial Relations Committee which prepared the material, pointed out in a recent issue of *NAM News* that in many companies it will be some time in the future before the major impact of the Act will be felt, and that in some companies the summer season has already furnished an indication of the probable extent of the problem and how it can best be handled in each individual case.

The accumulative effect of the Act as more and more employees are called into service, and more employees are required to devote special time to Reserve Training, will pose a variety of problems which can be handled in advance if the employer is acquainted with his duties and obligations under the Act, according to the article.

It was explained that the Reserve Forces Act of 1955 amended two other laws, the Universal Military Training and Service Act of 1951, and the Armed Forces Reserve Act of 1952.

In the 1951 Act, the term of service for draftees was increased from 20 to 24 months, and eight years was prescribed as the total active and reserve military service obligation.

In the 1952 Act, the Ready Reserve, the Standby Reserve, and the Retired Reserve were created and the liability fixed for future active duty.

The Reserve Forces Act of 1955 was said to have added the following features to the program.

1. Enlarges the size of the Reserve and clarifies its structure.

2. Establishes an obligation to train as a reservist and provides for compliance with that obligation.

3. Provides ways for young men to enlist and train for the reserve components.

4. Creates shorter total military obligations for persons entering service after enactment of the Act.

It was strongly recommended that individual records of employees be brought up to date and maintained that way so as to contain the required information from a company angle. This type of employee record should enable future plans to be made based on a combination of such information as age, family status, past military service, current liability for service, current enrollment in training or reserve components, and any plans for such enrollment.

battery fillers an expensive luxury?

by Thomas F. O'Connor
Management consultant
Greenville, S. C.
Exclusive

Weavers at $1.40 *an hour may be cheaper than battery fillers at* $1.12

THERE IS diversity of opinion regarding the advisability of employing helpers on multi-machine work in a textile mill. Sometimes it is impossible to get along without them, and then no argument arises; but when it is optional, there are pros and cons to be weighed and the verdict is in doubt.

I met a case in the weave room of a mill in South Carolina where battery fillers were employed, a practice which had not been questioned previously. My primary task was to find a way of arriving at a fair standard of efficiency for the conditions prevailing.

I have statistical tables of probable average residual productivity factors calculated by myself, based on the Ashcroft formula, with the aid of which and a little common sense this task was readily achieved.

Probing a little further, however, I found that the company would obtain a better over-all result by hiring more weavers, cutting the allocation of each, and having each weaver do his own battery filling. As this may be of interest to managers of other mills, I will try to present the facts as simply as possible.

First, however, since everybody may not be familiar with the tables and their use, it is necessary to introduce them and show how they are employed in straightforward cases.

AMONG THE PROBLEMS of the textile industry none has been more stubborn than the industrial engineer's of how to make a fair allowance in his standards for the inevitable loss due to machine in-

TABLE OF VALUES OF "A"

Values of cycle ratio p

N	.031	.032	.033	.034	.035	.036
1	.970	.969	.968	.967	.966	.965
5	4.819	4.825	4.819	4.813	4.807	4.801
10	9.566	9.582	9.566	9.549	9.531	9.514
11	10.542	10.523	10.503	10.483	10.462	10.441
12	11.481	11.458	11.435	11.411	11.387	11.362
13	12.415	12.389	12.362	12.334	12.305	12.276
14	13.344	13.314	13.282	13.249	13.216	13.182
15	14.268	14.232	14.195	14.157	14.118	14.079
16	15.185	15.143	15.101	15.057	15.011	14.965
17	16.094	16.047	15.997	15.946	15.894	15.840
18	16.996	16.941	16.884	16.825	16.764	16.701
19	17.889	17.826	17.760	17.692	17.621	17.548
20	18.771	18.699	18.623	18.545	18.463	18.378
21	19.643	19.559				
22	20.502	20.406				
23	21.347	21.237				
24	22.176	22.051				
25	22.988	22.844				
26	23.779	23.615				
27	24.549	24.361				
28	25.294	25.079				
29	26.012	25.768				
30	26.699	26.422				

terference. Here is the matter in brief, taking a loom as a good example of the type of machine under discussion.

Once loaded and started by the weaver, it has to run for a known time to produce a certain amount of cloth. Quite often the unit of production used is the amount turned out in one hour's run of the loom, and as this simplifies the calculations I will use it.

During the run of the loom, it is subject to random stops for reasons such as filling break, warp break, and mechanical trouble, and the weaver is called on to straighten things out and restart the loom. The total weaver attention time per unit is found by well known methods of time study, and it is usually very much less than the loom run time.

If the weaver had only one loom to look after, he would be idle for long stretches, so it is customary, as is well known, to assign several looms to one weaver. Under these conditions—several looms calling for attention at random intervals with only one weaver to give it to them—arises the liability to the loss known as interference.

Interference may be defined as the time lost by a machine standing still waiting for attention while the operator is busy elsewhere. How much is this loss on average? That is the big question which faces the engineer and the manager.

They both need the answer in order to set realistic production standards, which will be used for payroll, costing, production planning, budgeting, and so forth. It has been established that direct measurement of interference is not feasible. Hence a mathematical solution has been sought by many researchers, without any success as far as the industrial engineer is concerned until the solution was found by Henry Ashcroft.

It is his formula which I have used in building tables of the factor "A" for values of the assignment running from 1 machine to over 300. "A" is the number of machine running hours which the average operator is expected to get on average from the "N" machines of his assignment every hour. It is an index of residual productivity, that is to say the production to be expected after attention time and interference have taken their toll.

THE TABLES connect the three variables N, A, and p. The third, p, known as the cycle ratio, is the fraction of an hour the operator works on stops per hour of machine time. Knowing any two of the variables, you can find the other in the tables.

For instance, if N is 20 and p is .036, the tables show A to be 18.378 (see the portion of the tables reproduced on this page).

Having A, other valuable information can now be deduced. The cycle time, symbol "H," is given by the expression

$$H = N \times \frac{T}{A}$$

so that

$$H = 20 \times \frac{60}{18.378} = 65.35$$

That is to say, after taking account of machine time, waiting time, and attention time, production is at the rate of 60 minutes machine run in 65.35 minutes. Thus the efficiency, "E," is

$$\frac{60}{65.35} = 91.89\%$$

If you want to know how much time is lost on average in waiting, simply find the sum of machine time (60) and attention time (.036 hour = 2.16 minute), which is 62.16, and subtract it from the cycle time of 65.35 minutes. The answer is 3.19 minutes, from which it is learned that under these conditions, a machine which stops may expect to wait for the weaver, on average, a time equal to 1½ times the time the weaver will have to devote to it when he finally arrives.

How much of the weaver's time is taken up with work on stops? Simply multiply p by A. In this case it comes to .66, which means he is 66% occupied with stops, and therefore has about one third of his time available for patrolling, inspecting, and so forth.

The above remarks are intended to familiarize the reader with the tables and the manner of using them in simple cases. Now

for the problem which caused this article to be written.

A WEAVER has 20 looms and is assisted by a battery filler who looks after 30 looms. If a loom stops because it requires the weaver's attention, it may get that attention right away, or some other loom may be occupying the weaver at that moment, causing a delay. On average there will be some waiting time. This is the customary interference situation inevitably associated with multi-machine assignments.

Now, however, there is additional interference and time loss, for when the loom stops for lack of filling material the situation I have outlined in connection with the weaver repeats itself with regard to the battery filler. How to calculate the standard efficiency under these conditions is the problem.

The first step of course is to employ time study to determine the work put in by each operator. Per loom running hour, the weaver's time, symbol "t," is found to be 2.4 minutes, and the battery filler's time, t, is 2.1 minutes. The treatment from here on is a little tedious, arithmetically speaking, but the principle is quite simple. It is to consider the loom from two distinct points of view in turn.

First, from the weaver's point of view calculate a value for the cycle time, inserting a guess for the battery filler interference loss. Calculate the weaver interference loss and use this in calculating a value for the cycle time from the battery filler's point of view.

There can be only one correct answer for the cycle time, so, if these two estimates disagree—as they usually do at first—then the calculations have to be revised until they fall in line. Once the true cycle time is obtained all the other information will follow—efficiency, workload, and so on.

Omitting the figuring*, here are the findings. True standard cycle time: 74.5 minutes for 60 minutes of production, giving a standard efficiency of .805 (60 ÷ 74.5). Workloads: weaver 65%, battery filler 85%.

THE QUESTION that naturally arises at this point is this: "since employing auxiliary help gives rise to additional interference, resulting in loss of efficiency, why is it done?" In some cases one can readily see that auxiliary help just has to be provided, as for instance in warp loading. But quill changing could be made a part of the weaver's duties. It would probably mean that his allocation would have to be cut, in other words more weavers would have to be hired.

There is the crux of the problem. The pay of the battery hand is less than that of a weaver, and the thinking may be that although production has to be sacrificed, the over-all result of hiring auxiliaries is in the firm's favor.

I doubt if there are any figures to substantiate this conclusion. I am in a position to state with a considerable degree of confidence in this instance that the firm is losing on balance, and would do better to spend the money (now spent on battery fillers) on additional weavers. Following are figures to back that statement.

The weaver averages $1.40 per hour, and the battery hand $1.125. To keep the total labor cost unchanged when employing weavers only, simple arithmetic shows that the assignment should be 13 looms each.

Imagine this measure is carried out. The weaver has 13 looms. Now he has to change quills as well as perform his other duties, so t becomes 4.5 minutes, and p becomes .075. For p = .075 and N = 13, A is found to be 10.612, giving an efficiency of .816 (previously .805).

Thus it is clear that production would be gained at no increase in labor cost if this firm were to employ all weavers and no auxiliaries. Also it is noteworthy that the gain really would be somewhat more than I have figured above, since the weaver's walk time has been cut down, while the battery filler's has been eliminated. If the figures for walk time were available separately, it would be a simple matter to correct the above to show the true picture.

It is important to remember that I have not established a general rule that auxiliaries are unprofitable. I have only shown how to investigate the matter with the aid of the tables, and I question whether it is possible to get the answer any other way.

*The author will be glad to supply details of the calculations to those interested. He may be addressed at 209 E. Stone Ave., Greenville, S. C.

How mills benefit from a good quality control program

■ MOST important of the benefits to be derived from a well coordinated quality control program in a textile organization — from raw materials through spinning, weaving, and finishing — is the fact that there will be enhanced consumer acceptance, since a product of uniform quality is a more saleable product.

This was the opinion expressed by *Dr. L. H. Hance*, president of the Institute of Textile Technology, Charlottesville, Va., to members of the American Association of Textile Technology, Inc., on Nov. 7.

Stating that his conclusions were based on experiences in a large number of mills, Dr. Hance listed as next in importance the savings in costs due to reduced seconds, waste, and reprocessing. Further cost savings will accrue, he said, from fewer machine stoppages because of poor quality, thereby raising production and machine efficiency.

A simple but effective method of creating added appreciation for the company is to exhibit quality end-products to employees and townspeople. Closer and better understanding can be accomplished through community-wide meetings and fun, food, and fellowship.

Be sure your company is considered a

Community Asset

by Claude A. Crocker*
Clinton and Lydia
Cotton Mills
Clinton, S. C.
Exclusive

Outstanding leaders can clarify some of our economic fallacies. . . . . F. E. Grier, president of A.C.M.I., speaking to 300-plus Clinton Civic Club members and guests.

PARTICULARLY in the South there is an increasingly acute awareness by progressive textile managements and associations of the necessity and desirability of good community and public relations.

We in the textile industry, as compared to other industries, have been slow to recognize and appreciate the values of such relations. However, this is by no means a new field; actually it is as old as the desire for the approval and acceptance of the group.

Public relations, as a field, is among the least exact of the inexact sciences, with many and varied definitions. Recently a mill superintendent was asked by the general manager for his thoughts of beginning, in a small way, a public relations department. The superintendent was quick to admit he didn't know of what it should consist and asked for a definition of the title, to which the astute general manager made the following reply, "I'm not too sure myself, only to say this: With the many complex problems facing us in the textile industry today, we can't go around treating our publics like poor relations."

The general manager was at least aware that a company has many publics, none of which can be treated with a callous attitude. The most important public a company has is its employees; and community relations, good or bad, begin right in the plant. Employees talk about subjects that interest them most—their families, their homes, and their company.

They talk about their company to their neighbors, their grocer, their druggist, friends, and families. Things employees say about the company largely determine the community's attitude toward it. Therefore, it is essential that employees, first of all, be currently and correctly informed on company developments and aims.

IN ADDITION to personal contacts, there are a myriad of communication media through which company information can be conveyed. Among these are bulletin boards, employee meetings, newsletters, posters, visual aids, magazines and newspapers, pay envelope insertions, and leaflets.

An opportunity to tap the strongest communication grapevine in all the world, the textile waterhouse variety, should not be overlooked.

THE RELATIONSHIPS with an infinite number of other publics—merchants, professional men, civic groups, governmental departments and officials, and customers—with whom it is vital, and in countless ways profitable, calls for a different approach.

It is to these publics that the company's story based on a proud heritage and tradition should be

*Mr. Crocker is director of public relations for Clinton and Lydia Cotton Mills.

told. This is of paramount importance today when some individuals and organizations have dedicated themselves to conveying distorted stories to our employees and publics.

For these publics to have a good opinion of us as an organization, they must be properly informed. Benefits and services to employees such as continuous service awards, scholarships, safety and recreational programs, promotions, improved working conditions, steady employment, etc., all tangible evidences of the company's concern for its employees, should be told.

COMMUNICATION media to your communities and publics are many. Your internal publication mailed to key individuals, merchants, clergymen, teachers, barbers, and others in public-opinion-forming positions, provides an invaluable outlet to foster and strengthen public relations.

Modified open houses, consisting of small groups, provide an excellent opportunity to show the public behind the scenes. In these groups should be businessmen, city officials, and others who some twenty-plus years ago were your employees. They will be amazed at the modernization and technological advances, and will invariably go out as your good will ambassadors.

Civic clubs, composed of a representative cross section of the citizenry, offer an ideal situation, through the program committees, to present programs and speakers to clarify such current economic fallacies as: (1) The workers of any nation can improve their welfare by increasing their pay without increasing their production; and (2) that job security can be guaranteed by management, etc.

Active participation by supervisory personnel in United Chest Drives, Boy Scout work, etc., will oftentimes beget better public relations than can be obtained by heavy financial support. It is through these programs a company becomes known as a "good neighbor."

Exhibits of your quality end-products in such places as the county fair, banks, store windows, hotel lobbies, public schools, and libraries can be effective public relations media.

Local papers and radio stations are always anxious to receive releases concerning company policies affecting your employees, and their readers and listeners.

WHETHER you like it or not, be it good or bad, the public is daily cataloging your company as an asset or liability to the community. A community will quickly protect its assets and, by the same token, will quickly turn its back on a liability.

The future indicates an even greater need for good public relations. Although the duties of a public relations man are as varied as is the job to be done, I am sure there is a man in your company who can properly coordinate, and release to the public, company information which will prove a wise investment for the future.

Wool Bureau to sponsor project on wrinkle resistance

■ A TWO-YEAR research program to determine the possibility of improving the natural wrinkle-resistant properties of all-wool summerweight suits has been announced by the Wool Bureau. The program will be carried on at Fabric Research Laboratories, Inc., Dedham, Mass., under the direction of Dr. Walter J. Hamburger, director.

Studies by consumer testing organizations have demonstrated the excellence of certain all-wool tropicals in wrinkle resistance. In a recent test of 78 summer suit brands only all-wool tropicals received ratings of excellent, the Bureau pointed out. The new research program, the Bureau said, will seek to find out why some all-wool summerweight suits have this characteristic. The results of this research can aid the manufacturer in producing ever-improved lightweight wool fabrics, the Bureau said.

Studies already made show that wrinkle resistance varies greatly with fabric construction and fiber properties. The resilient and springy wool fiber can be stretched, bent, and twisted, and it will return essentially undamaged to its original state. Ultimate aim of the present project is to determine the best way of utilizing the wool fiber's basic properties of high elasticity, resilience, and absorbency to produce summer suits with even better performance.

Today, when ease-of-care is of such importance to the consumer, it is extremely important, the Bureau said, that wool fabrics be constructed making optimum use of the wool fiber's intrinsic qualities. The research program will be aimed at creation of wool fabrics that will be easiest to care for, have the neatest appearance, and perform well under all conditions of temperature and humidity.

Fabrics to be used in the research will be designed of varying construction to find out what relation exists between yarn count, weave, yarn structure, fiber characteristics, and wrinkle resistance.

Among other instrument and research techniques to be used in the project, a unique instrument for determining the behavior of lightweight wool suitings under high temperatures and humidity has been developed at Fabric Research Laboratories. At the present time a maximum temperature of 95 F and relative humidity of 95% can be accurately achieved and controlled in this new testing device.

Applying permanent latex finish to denim is accomplished on conventional slashing or padding equipment. The latex imparts unusual abrasion and crock resistance, a pleasant hand, dimensional stability, and color fastness.

Synthetic latices

They are finding increased usage in backcoating, sizing, saturating, and pigment binding

Table 1 — Latex Consumption, 1951-1955

(Long Tons/yr.)

Latex	1951	1952	1953	1954	1955
Natural	46,750	55,567	67,375	75,931	86,478
Neoprene	6,279	7,368	7,981	7,251	8,736
Butadiene-Styrene (GR-S)	31,031	40,562	46,473	44,173	63,982
Butadiene-Acrylonitrile	2,628	3,093	3,654	4,507	8,495
TOTALS	86,688	106,590	125,483	131,862	167,691

by John E. Warner
Manager
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Chemical Division
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Exclusive

IN THE LAST several decades, many new man-made high polymers have been developed for the textile industry. Not only new fibers such as nylon have resulted, but also new resinous or rubbery products for treatment of fibers, yarns, and fabrics.

Because the processing of textiles embraces mainly aqueous systems, the new synthetic latices, which are aqueous dispersions of resins, rubbers, or thermoplastic materials, have had an excellent acceptance. These products are, at times, referred to as "resin emulsions," "rubber latex," and by other similar terms. The reason is that one of the principal methods of preparation of high polymers (resin, rubber, and plastics) is the "emulsion polymerization" process. This is a softened water system in which are emulsified the ingredients to be polymerized, such as butadiene, styrene, acrylonitrile, and so forth.

After polymerization, the rubber, plastic, or resin can be separated by coagulation and subsequent drying. The latex can also be used "as is" merely by adding stabilizers to the final emulsion or latex to provide the desirable degree of stability in handling, storage, or shipment. It is the synthetic materials in latex form with which we are now concerned in the following discussion.

THE ONLY commercial latex available for textile applications prior to the introduction of synthetic latices was natural rubber latex. Being a natural product, the chemical composition of natural latex could only be altered slightly, and this, together with its widely varying and often high price, restricted it to a number of special applications.

Many advantages in textile products could be brought about by application of natural rubber latex, but there were certain shortcomings. These included poor resistance to oxygen, heat, light, oils, and solvents.

The need for other materials to overcome these deficiencies became increasingly apparent, and was one of the outstanding factors which led to development of a number of synthetic latex products prior to 1942. However, it was not until the establishment of the synthetic rubber program during World War II that large volumes of synthetic latex were made available.

Applications of these synthetic materials to textiles resulted in many new and improved properties. And since that time (which was in the 1930's), many significant innovations in the textile industry have resulted. For example, use of synthetic latices has made possible the development of such completely new products as nonwoven fabrics. Today nonwoven fabrics appear to be established in a new industry involving a new technology.

BASICALLY, synthetic latices are used in modern textile processing to effect two major changes:

(1) Modification of the basic fabric and/or fiber properties.

(2) Impart desirable pigment binding properties in textile print-

for the textile industry

Table 2—Latex Applications, by Type, in Textile Operations

Textile Application	Type of Latex						
	Natural	Butadiene-Styrene	Butadiene-Acrylonitrile	Neoprene	Polyvinyl Chloride	Polyvinyl Acetate	Acrylic
Nonwoven Fabric		X	X		X	X	X
Backcoating (carpet, upholstery)	X	X	X		X		X
Fabric Sizing-Finishing		X	X		X	X	
Warp Sizing			X			X	
Coating	X	X	X	X	X		X
Adhesives*	X	X	X	X		X	
Textile Printing		X	X				X
Pigment Dyeing		X	X				X
Cord Dip		X	X				

*As applied only in textile processing

ing, dyeing, and flocking operations.

By accomplishing these ends, synthetic latices are in large measure responsible for the increasing sales appeal built into many textile products. Increased usage of latices by the textile industry signifies that even better things are to come in the upgrading of textiles.

According to the Goodyear Sales Research Department, it is estimated that the textile industry consumes about 25% of all latex produced. Based upon this premise, it can be calculated that latex consumption has roughly doubled in the textile industry over the past five years.

Table I illustrates consumption by year for natural, neoprene, butadiene-styrene (GR-S), and nitrile latices since 1951. In addition to the latices listed in *Table I*, there are also others to consider in textile processing—polyvinyl chloride, polyvinyl acetate, and acrylic latices.

Table II lists the areas of applications for all of these latices in textile operations, and approximations for the amount of latex used in these applications are given in *Table III*.

CERTAIN BASIC properties of textile fabrics are affected when synthetic latex is used. These properties are generally concerned with:

(a) Better hand
(b) Abrasion resistance
(c) Improved crease recovery
(d) Improved wash fastness,

Saturating nonwoven fabric is accomplished by moving the bat of material through a latex solution by means of a carrier roll. After saturation, the fabric is conveyed to drying and curing ovens.

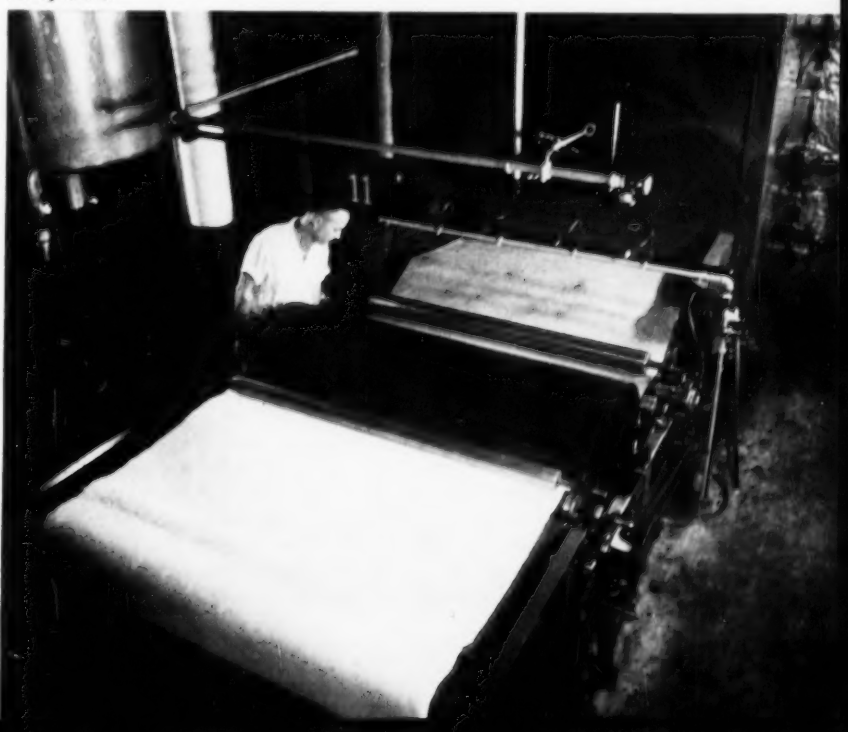


Table 3—Weight and Per Cent of Latex Consumed in Textile Applications

Textile Application	Amount Used	% Latex in Compound
Nonwoven Fabric	5-50%*	85-100%
Back Sizing	0.5-10 oz/sq yd.	25-100
Fabric Finishing	1-4%	100
Warp Sizing	4-8%	15-100
Coated Fabric	1-16 oz/sq yd.	50-100
Adhesives	0.5-2 oz/ sq yd.	50-100
Textile Printing	0.5-4 oz/sq yd.	50-80
Pigment Dyeing	1-4 oz/sq yd.	50-80
Cord Dip	4-8%	85-100

*Given as % of total weight because of wide variations in weight of material

crocking, and gas odor permeability

(e) Better binding qualities

(f) Quality, appearance, and long life

To attain these properties, a certain permanence must be built into the fiber or fabric. This is accomplished with various latex finishes, or sometimes by the application of certain resin finishes. Often combinations of latex and resin are used to attain the desired properties in the textile material being processed.

Latex and resin finishes find their primary use for fabric or fiber modification in the following applications:

(a) Nonwoven fabrics

(b) Backcoating of woven and tufted textiles and upholstery

(c) Fabric sizing

(d) Warp sizing

(e) Cord dips

(f) Pigment-binding

(g) Coatings, saturating, impregnating

NONWOVEN FABRICS, or more properly, bonded fabrics, have grown into a sizable industry just since 1946, although they were produced as long as 25 years ago. Their growth parallels to a great extent the growth in the production of synthetic latices, since it has been to the polymer chemist that producers have turned in search of new and improved binders.

The fact that production of nonwoven fabrics in 1955 was estimated to be between 300 and 450 million square yards attests to the success of the synthetic latex development laboratories. It is apparent that this field has now come "of age."

It is interesting to consider in comparison just one large woven fabric field, blue denims, whose output is considered a major segment of the textile industry. Annual production of denims is also in the neighborhood of 400 million square yards.

A wide variety of latices are used in the commercial production of nonwoven fabrics. Those in widest use probably are the following: butadiene-acrylonitrile copolymer, polyvinyl chloride polymers and copolymers, polyvinyl acetate, and acrylics.

Choice of a binder system is dictated largely by three considerations: end-use requirements, fiber blend, and cost. For example, in disposable cleaning cloths, a liquid plasticized vinyl chloride latex gives good binding properties and a low cost, especially where cotton and rayon fibers are involved. However, for coating quality fabric, the plasticizer might have to be a nitrile latex to give higher strength and low migration into the coating.

The nitrile-type latex, in a cured system, has found favor for products requiring good elastic recovery, solvent resistance, and launderability. In addition, the improved fiber adhesion, where synthetic fibers are present in the blend, plays a big part in the success of such articles as dressmaker's linings, and underskirts for the popular "bouffant" skirts. Often a resin is present to provide stiffness and added fiber adhesion.

As might be expected, some people in a position to know are predicting that additional outerwear nonwoven fabrics are just around the corner. Suffice to say that considerable development work is being done in this field.

BACKCOATING

Production of yarns for tufted textiles has risen from 36 million pounds of yarn in 1951 to 177.5 million pounds in 1955. This exceeds the growth rate from 1939 to 1951 by five times. Growth is attributed primarily to the development and manufacture of tufting machines, capable of making rugs and carpet in sizes larger than 4 x 6 ft scatter rug dimensions. The knowledge that a superior loop lock could be made for tufted carpet, using a latex backing, spurred textile equipment manufacturers into producing tufting machines to make larger rugs and carpets.

As a result of the new tufting machines, over 46 million yards of tufted carpet was produced in 1955 in sizes larger than the 4 x 6 ft dimension. This established a growth in that industry of more than 800 per cent in five years. Only 6 million yards of tufted carpet in sizes of 4 x 6 ft or smaller was produced in 1951.

As a result of this increased production, latex consumption has also increased substantially. Nitrile latex production and consumption, for example, during the last five years has increased almost fourfold. One of the major factors of this growth is the increased usage by the textile industry for tufted applications and others.

The first materials used for carpet backing were of the starch-natural glue-gums class. This type of coating was solely replaced by natural rubber compounds. Certain shortcomings such as long-term aging problems resulted from use of these materials.

Then, synthetic butadiene latices were introduced for these backcoating applications and came into wide use with blends of natural latex. These blends showed improved aging properties, but careful compounding and cure was still required. Eventually, formula-

tions were developed based on blends of synthetic butadiene-acrylonitrile latices and vinyl latices to obtain excellent aging characteristics without the need for curing.

The advantages of the nitrile-vinyl latex system with respect to processing are as follows:

(1) Affords a stable price structure.

(2) Makes possible a simple, one tank compounding.

(3) Eliminates the need for curing ingredients.

(4) Gives excellent long-term aging that is not sensitive to variations in compounding or degree of cure.

With respect to the properties imparted by the latex system, the following advantages are cited:

(a) Binds the pile securely to the yarn back.

(b) Lays the nap on the backing.

(c) Provides better anchorage when laid.

(d) Prevents raveling and pulling of pile tufts, to improve durability.

(e) Produces a firm, nonrubbery-type hand, body, and increased weight.

(f) Imparts good solvent resistance to the backing to eliminate softening when organic spot removers and dry cleaners are used.

THE COMPOUNDING procedure is simplified, due to the stability of the nitrile latex. Fillers are added by a simple stir-in operation and the need for ball mills or high shear equipment is eliminated. Application is accomplished on a conventional reverse roll or spray equipment.

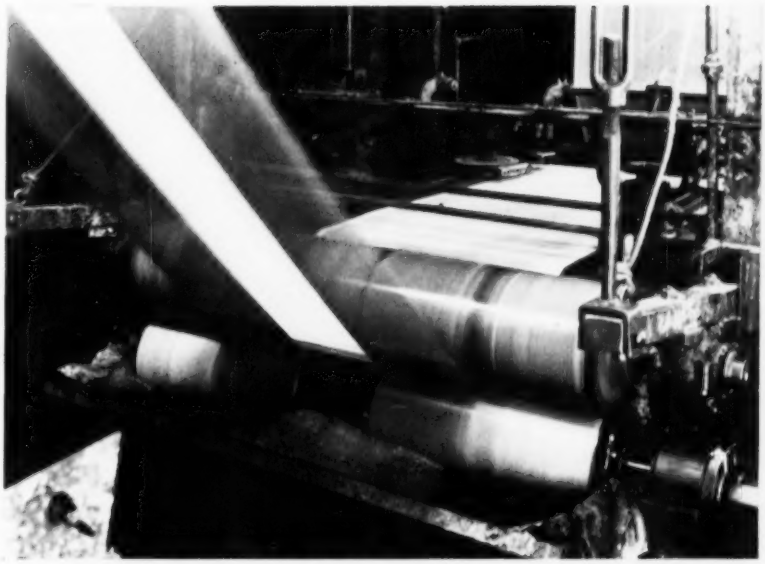
Coating weights may be varied from 10 ounces to 16 ounces per square yard to attain the desired performance of the carpet. At low backing weights it is generally best to reduce the loading level. This insures application of an adequate amount of binder.

The degree of penetration is also an important factor. It is influenced by viscosity, solids content, and the type of thickener. All have a bearing on the type of coating produced.

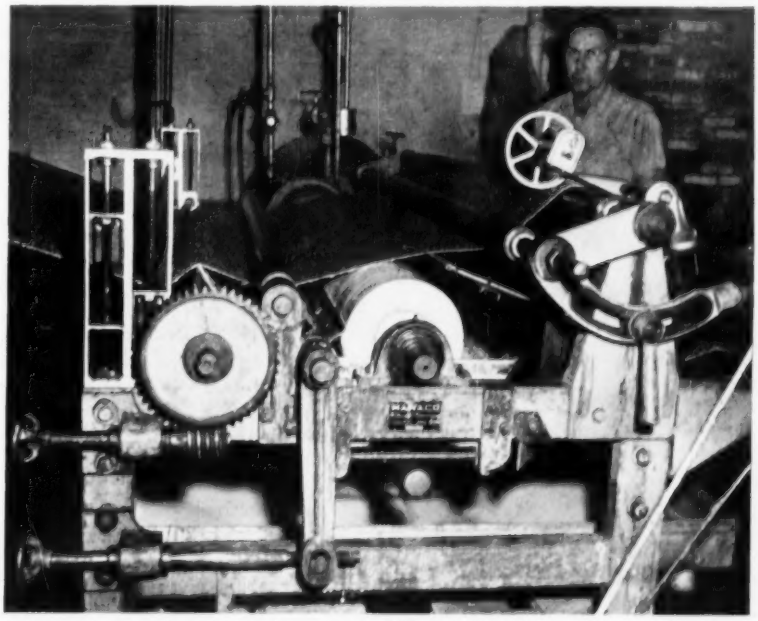
Starch and glue sizes are still used extensively for these applications because they represent a lower materials cost. However, added durability and resistance to water and vermin are accomplished with latex sizing materials. Consequently, they are coming into greater prominence for tufted applications in carpeting and upholstery materials, and for the more expensive grades of woven carpeting. And, by meeting textile industry requirements, latex backcoatings offer manufacturers a system which is simple and nonhazardous.

Application of a synthetic rubber latex coating to the back of upholstery and other textiles has led to the production of improved fabrics for automotive and furniture upholstery, mattress tickings, handbags, footwear, and similar

(Continued on page 135)



Continuous pigment dyeing of leno fabric is accomplished by applying a water dispersion of pigment and latex to the material as it passes through a two-roll padder. Latex imparts excellent hand and good anti-crock properties.



Latex treatment adds body and improves durability of this upholstery fabric. It binds the individual fibers in place, reduces raveling, and improves snag and tear resistance.

Worsted Blending

how much is enough?

by Watson J. Wood
Manager
Knitters, Ltd.
Lindsay, Ont.
Exclusive

Gains from increased drafting and doubling fall off fast

OF ALL the lectures given and articles written on this fascinating subject, none to my knowledge has ever come to any final conclusion.

Mixing solids such as fibers is of course quite a different matter from mixing liquids. This applies to all kinds of wool, hair, or synthetic fibers, whether they be colored, natural whites, or fibers of differing kinds and qualities. As to whether two or more colors have been efficiently mixed or blended to a given shade, much has been left to vision — the human eye.

Tests have conclusively proved that individuals are quite unreliable. Especially is this true on blends of black and white fibers. All fabrics manufactured from such yarns, no matter whether they be knitted, woven, or felted goods, are definitely streaky, showing more black or white in places throughout the whole piece.

It matters not what kind of machinery was used to manufacture the yarns or produce the cloth, the results are always the same. The woolen system may be used, with a blend laid out in careful weights, with picking completed in an "efficient" manner. Fibers may be combed together on any of the conventional combing machines; or blended by carding, gills, Pin Drafters, drawings, and spun under any method or system whatsoever. The result remains the same.

IS THERE then any practical method of assessing efficiency? A method, for example, which would prove conclusively to the satisfaction of everyone concerned that blending had been accomplished to a given degree of efficiency, accepting 100 as being "perfect"?

The intention of my research and practice as described here was to find such a method, and by the use of certain formulas to help those engaged in the industry to know when to stop blending, i.e., when any further processing would be fruitless and merely a waste of time.

Since I specialize in worsted yarn manufacture, this article deals with that branch of the industry, although woolen men and those engaged in cotton or synthetics should profit by it and be able to arrive at their own formulas by a similar study.

AT THIS point, to get a clear picture of what blending fibers actually means is, I believe, to understand the fact that all we can possibly do is to make "designs" over a given area.

This may be better expressed by diagrams. *Fig. 1*, for example, represents a sliver or twisted slubbing cut in two and its end examined under a microscope. There are four doublings.

Fig. 2 represents 16 doublings, and *Fig. 3* hundreds of doublings.

Each of these figures is considered to have 19,600 fibers in its cross section, i.e., 9,800 black fibers and 9,800 white fibers, as in the example to be given below.

A "perfect" blend is represented by a perfect design, i.e., a perfectly blended sliver, roving, or yarn will have alternate fibers of each color in its cross section *(Fig. 4)*.

The fewer fibers in the cross section, the finer the thread, and the finer the thread the more irregular does the shade become, until we have a multitude of possible designs in the cross section *(Figs. 5 and 6.)*.

Blending may be likened to a game of chance, since the fibers are mixed haphazardly throughout the whole process of doubling and drafting.

WE TOOK a sliver from a 64s Noble combed top, which weighed 4 ounces per 10 yards, or 64 drams per 256 yards. The worsted count of the fibers we found to be 1400s.

Since 40 yards of 1s weigh 18.3 drams, the number of fibers in the cross section of the sliver is:

$$\frac{256 \times 1400}{18.3} = 19,600$$

A blend of 10 pounds of this stock in bleached white and 10 pounds dyed black was mixed

thoroughly by passing through Pin Drafters 15 times, 6 doublings each time, employing a draft of 6 at each operation. The doublings were therefore equal to almost 500,000,000,000, and the multiple drafts were of course the same.

Everyone will, I think, agree that doubling and drafting are the only factors which must be considered in blending.

The 20-pound lot, blended as described, was put through a conventional open set of Bradford drawing. The layout was a standard one for this quality, which we have employed for many years.

After drawing and spinning to 36s worsted count, we cut hundreds of one-inch pieces of yarn from 20 bobbins, and separated the fibers. The black and the white fibers in each piece were counted.

Samples were found which had black and white fibers in a ratio as high as 60-40, but the average over-all proved to be 50-50.

A similar test was carried out with a blend of 15 per cent black and 85 per cent white. In this blend, 19 per cent black proved to be the maximum, and 10 per cent the minimum.

Of this blend we normally had 30,000 pounds running in the mill. The layout was the same as used in the tests, except of course that the tops were not blended before entering the drawing.

Set One

Operation	Ends Up	Draft	Drams/ 40 Yd
1st Pin Drafter	6	6	256
2nd Pin Drafter	5	6	213
Draw Box	4	6	142
Weigh Box	4	6	95
Finisher	4	6	63
Reducer	2	5	25.2
Rover	1	5.7	4.4

Set Two

Operation	Ends Up	Draft	Drams/ 40 Yd
Intersecting Gill	6	6	256
Two-Spindle Gill	5	6	213
Draw Box	4	6	142
Weigh Box	4	6	95
Finisher	4	6	63
Reducer	2	5	25.2
Rover	1	5.7	4.4

The total of the doublings in each case was 3,840, and the total draft was 217,680. The roving was 4.15 worsted count, and there were 336 fibers per average cross section.

A thousand one-inch pieces were cut from this roving, and an attempt was made to count the various styles of "design" in the cross sections. This proved to be too ambitious an undertaking. No two pieces were alike, so the attempt was abandoned.

The fibers were separated and counted, as before; a maximum of 20 per cent black was found, and a minimum of 8 per cent (compared with 19 per cent and 10 per cent, respectively, in the test with nearly half a trillion doublings).

Table I is the layout used in processing a 15-85 black-white blend, showing how the mixing of the fibers progresses. The per cent mix figures in the last column were derived from the following formula:

$$\text{Per cent mix} = \frac{\text{top weight} \times \text{doublings}}{\text{draft} \times \text{drams} \times \text{passages}} \times 100$$

For example, the figure 14% (rounded off) is derived as follows:

$$\frac{256 \times 7680 \times 100}{444{,}528 \times 4.4 \times 7} = 14\%, \text{ approximately}$$

$$100 - 14 = 86\%$$

THE INHERENT nonuniformity introduced by roller drafting makes it impossible to produce a blend which is completely uniform. Previous investigators have shown that a mixture of about 90.6 per cent is the best that can be obtained, considering the limitations of the equipment available. Our experiments tend to confirm this.

In the formula shown above, if the drafts and doublings remain the same, they cancel out each other. Similarly, if sliver weight remains unchanged, it may be omitted from the calculations. Therefore blending would appear to be entirely dependent on number of passages — in the above example:

$$\frac{100}{7} = 14.29\%$$

Increased drafts or fewer doublings are necessary to convert the sliver to the form of roving. In the light of this, I do not see much advantage — blend-wise — to having a large number of ends up at the first machine. There may be a production advantage in doing so, but this article is concerned only with efficient blending.

However, where light gilling machines are used exclusively, followed by high draft methods, efficient blending may be ac-

Fig. 1

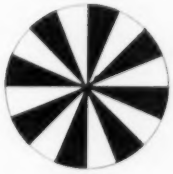


Fig. 2

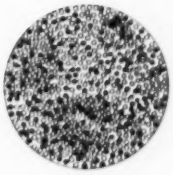


Fig. 3

Fig. 4

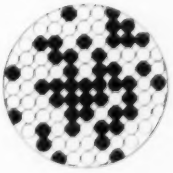


Fig. 5

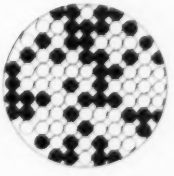


Fig. 6

TABLE I. Blending Uniformity Calculated by Weight

Machine	Doublings	Drafts	Grains/ 40 Yd	Total Doublings	Total Drafts	Grains/ Doubling	Drams/ 40 Yd	Per Cent Mix	
Intersecting gills	6	6	7000	6	6	1166	256.	—	—
Two-spindle gill	5	6	5833	30	36	194	213.3	50	50
Draw box	4	6	3889	120	216	33	142.3	33	67
Weigh box	4	7	2222	480	1512	4.64	81.2	25	75
Finisher	4	7	1270	1920	10584	0.661	46.4	20	80
Reducer	2	6	423	3840	63504	0.110	15.4	17	83
Rover	2	7	120	7680	444528	0.0156	4.4	14	86

TABLE II. Blending Uniformity Calculated by Number of Fibers

Passages	Ends Up	Total Fibers	Draft	Fibers	Designs*	Fibers per Designs**	Worsted Count
1	6	117600	6	19600	3	3270	0.0715
2	5	98000	6	16333	15	544	0.0858
3	4	65332	6	10888	60	90.7	0.1290
4	4	43552	6	7258	240	15.1	0.1930
5	4	29032	6	4838	960	5.04	0.289
6	3	14514	6	2419	2880	0.40	0.579

*Total doublings divided by two
**Number of white fibers and number of black fibers

complished with fewer passages. But let us take an example where four processes are used, with doublings of 12-8-6-2, and a draft of 12 at each process. Total doublings are 1152, and total drafts are 20,736, giving a resultant weight per yard of 14 drams (assuming a 256-dram sliver to begin with).

By the formula given above, the per cent mix will be:

$$\frac{256 \times 1152 \times 100}{20{,}736 \times 14 \times 4} = 25\%$$

$$100 - 25 = 75\% \text{ mix}$$

With such a layout, the stock would have to be subjected to a blending process before drawing, or more operations would be needed in the drawing.

The data in *Table II* concern a 50-50 black-white blend. According to our theory, the most homogeneous mixture would be reached at the fifth or sixth passage, although it would be 10 to 15 per cent short of the theoretical 100 per cent blend. Let us see.

In this case the total doublings equal 5760, and the total drafts equal 46,656. Using our formula, we find that the actual per cent mix is 89 per cent of the theoretical perfect mark as expected.

On the basis of design, we have reached the theoretically perfect 100 per cent after the fifth passage, but since in actual practice there will be at least 10 per cent irregularity introduced by roller drafting, the mix will actually be about 90 per cent complete.

THE FOLLOWING are results from one-inch samples of roving, with an average worsted count of 1/4.3s and a fiber fineness of 1/1400s. The blend in this case was 15-85 black-white.

Roving No. 1 and Roving No. 2 were taken from a sample mixture which had received 500,000,000 doublings and then was drawn normally. Roving No. 3 and Roving No. 4 were not blended before drawing.

Roving No.	Black Fibers Min. %	Max. %	Ave. %	Range %
1	12.4	20.1	14.9	7.7
2	10.0	25.5	14.8	15.5
3	10.7	24.2	15.5	13.5
4	9.4	20.0	13.9	10.6

These figures would appear to prove conclusively that blending in Rovings Nos. 1 and 2 was not appreciably improved by the half-trillion doublings.

It might be well to mention that coarse qualities have fewer fibers in their cross sections, and therefore require less blending or passages than do fine qualities.

In the past, to be sure that blending was done properly and that shades were uniform, tops were weighed up into sets of 100 to 300 pounds each, and were processed separately up to and including the weigh box. Today, if the Raper Autoleveller is used, slivers may be of different weights, and sets of tops for blending eliminated.

When such processing is accomplished before drawing, the number of slivers required, percentage-wise, for a given shade may be put up at the first drawing machine without either weighing or keeping sets separate. For example, where a 50-50 blend of two colors is required, equal numbers of prepared slivers, say six white and six black, may be run with full confidence.

Where only five per cent, for example, of a color is called for, a sliver weight to give this percentage with slivers of standard weight may also be arranged.

Cloth Conveyor Cut Costs

Less lifting and handling, no accidents in Woodside Mills' cloth room

Staff prepared
Exclusive

A NEW CONVEYOR in the cloth room at the Simpsonville, S. C., plant of Woodside Mills reduces lifting, cuts handling costs, reduces the likelihood of accidents, and makes the job easier.

A hazardous condition in lifting the heavy rolls of cloth was recognized after two minor accidents; superintendent Joe Edwards initiated a project to build and install an inclined conveyor to lift the cloth rolls to the correct level for packing.

The new inclined conveyor raises the rolls of inspected cloth to the proper level for packing in boxes for shipment. L. A. Stewart, cloth room supervisor, and Sam Mabry, shop supervisor, jointly designed and built the inclined conveyor, which includes five supporting rollers, a belt 12″ wide, and two driving drums about 12″ in diameter.

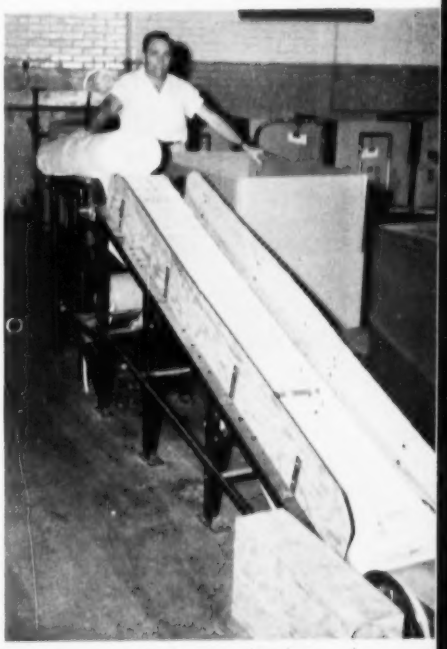
Formerly there were two head cloth graders, one on each line of inspection tables. Two men, one on each conveyor, performed the lifting and packing operations. Now the two men have enough time left to help check cloth grade, thereby relieving one cloth grader for other duties.

Cost of the two inclined conveyors (see accompanying illustrations) was amortized in about 10 weeks on the basis of direct savings, discounting other advantages, especially the safety feature.

The new units have been in operation about ten months and have given no mechanical trouble whatever. Employees agree that the conveyors are welcome additions to the department. In the words of one operative, "It cuts out more lifting than I thought it would."

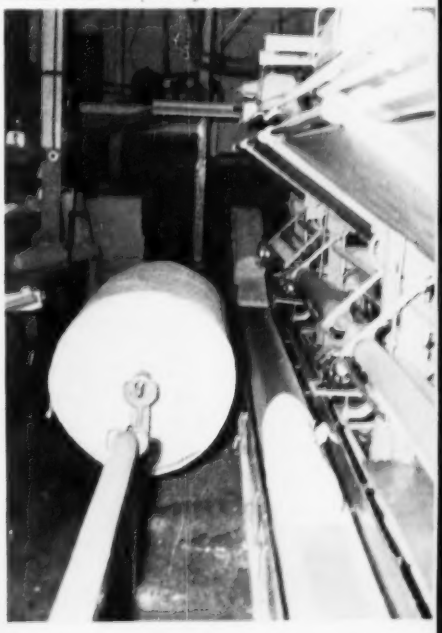
A conveyor was already in use behind each row of cloth inspection machines; the inclined conveyor was attached to the end of the existing conveyor to eliminate manual lifting of cloth rolls. The same driving motors which powered the existing conveyors now drive the old conveyor as well as the inclined addition.

The motors are rated at ¾ hp, and all parts except motors, bearings, and belts were made in the mill shop and assembled by mill personnel. Antifriction bearings were used throughout the new conveyor.

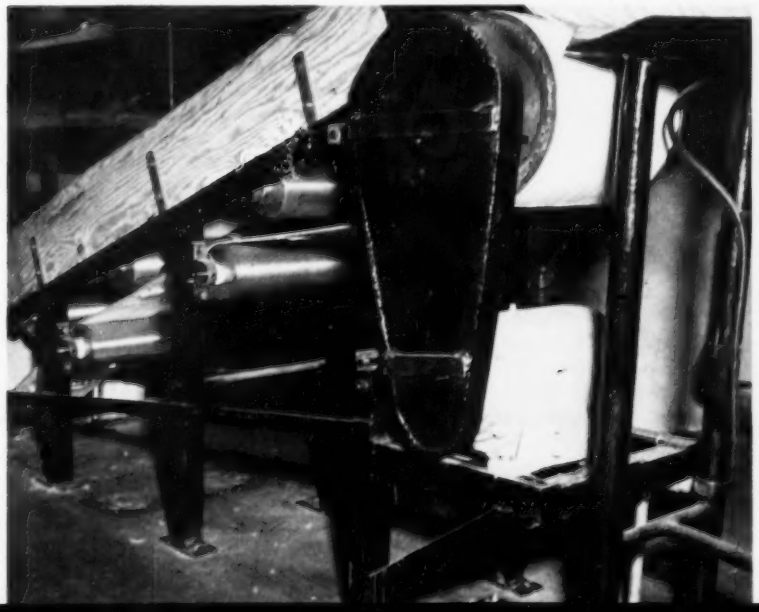


Inclined conveyor is about six feet long and raises rolls of cloth to correct level for packing in boxes for shipment.

Existing conveyor moves cloth to the inclined addition, which raises cloth roll to correct level for packing.



All parts except motors, bearings, and belts were made and assembled by mill personnel.



The slasher operator is the most important part of the slashing operation. Here we see him removing a lap from a warper beam and counting in a lease, two parts of his job that must be done with care.

WARP SIZING

Article 9—More on the sizing process, including how to change sets, leasing, and doffing*

by Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.
Exclusive

The Slasher Operator. It must be remembered that in the slasher room one man handles on his slasher the yarns that have been produced by combined efforts of warpers and winders, yarns that will be used in one or two hundred looms or more. A lot of time and money has been invested in making these yarns the best for their purpose, and the production of many looms is dependent on proper sizing. At twenty to sixty yards per minute on the slasher, it does not take a mistake long to ruin a lot of warp yarn. And re-sizing is not nearly as easy as re-finishing.

(Re-sizing is not a common operation. About the only time a mill re-sizes a warp is when one has so little size on it that it will not run in the loom, or because it has too many fuzz-balls caused by inadequate sizing. A warp with too much size or hard size is usually kept in the loom until it is evident that its operation is uneconomical and it is pulled out; such a warp is not re-sized. Rayon warps are re-sized occasionally.)

Sizing is a technical operation requiring more initiative and common sense in its operation than do most of the other more mechanical processes in the mill. Farrow, the British sizing expert, even goes so far as to say, "A purely mechanical management of sizing is as yet unattainable, and the most important result of recent investigations is to reaffirm the vital need for regularity of practice. This is in fact so necessary that it is well worthwhile for any firm to engage a scientific man capable of critical appreciation of the simple but essential physical factors involved, to act as manager of their sizing department. . . ."

The sizing operator should be capable of an understanding of technical processes, and should be neat, clean, and careful in his work. He should preferably be a man who has had experience in other parts of the mill, particularly in the weave room, so that he can fully appreciate the importance of the work he is doing.

Mechanical aptitude is useful in the proper care of the slasher, not so much in order that the operator be able to work on the machine himself, but in order that he be able to recognize quickly any troubles that may crop up, and that he may be able to suggest means for improving its operation when it is not running properly.

The slasher room itself should be carefully designed for efficient operation and pleasant working conditions to attract more competent personnel for this task as well as for the other improvements in production that will result.

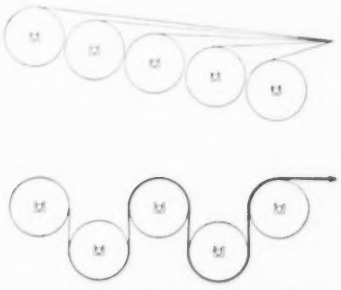
The slasher room operator should have sufficient initiative to watch the size and size conditions and not rely completely on me-

*This series of articles which deals with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers began in the May, 1956, issue of TEXTILE INDUSTRIES. Reprinting of the entire series in book form is planned.

chanical controls—mechanical gadgets can get out of adjustment, as anyone who works with them continually will learn.

Creeling and Changing Sets

For cotton and spun rayon yarns, whether the section beams are creeled by the "over-and-under" system, or by taking the ends overhead with tension devices is



Above, overhead creeling and, below, over-and-under creeling.

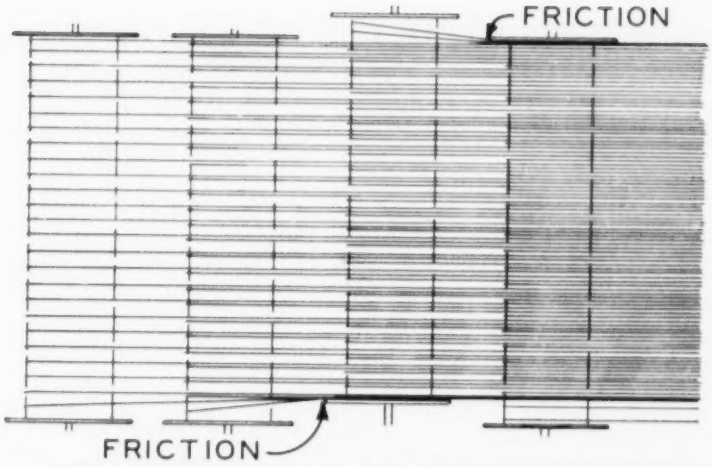
often a case of individual preference. Either way is satisfactory. It has been said that the overhead system gives the best results where beam heads have been warped, causing high and low selvages. The over-and-under system allows easier access to the beams for cutting laps.

Care should be taken to see that the section beams are perfectly even with each other, and that they are lined with their axes parallel to the squeeze rolls and drying cans. If they are not parallel, there will be a slight pull on the yarns, with an increased tendency to chafing and rolling. When the beams have been set in the creel without adjusting the heads even with each other, some of the selvage yarns will chafe by rubbing on the heads of the beams in front of the one from which they came.

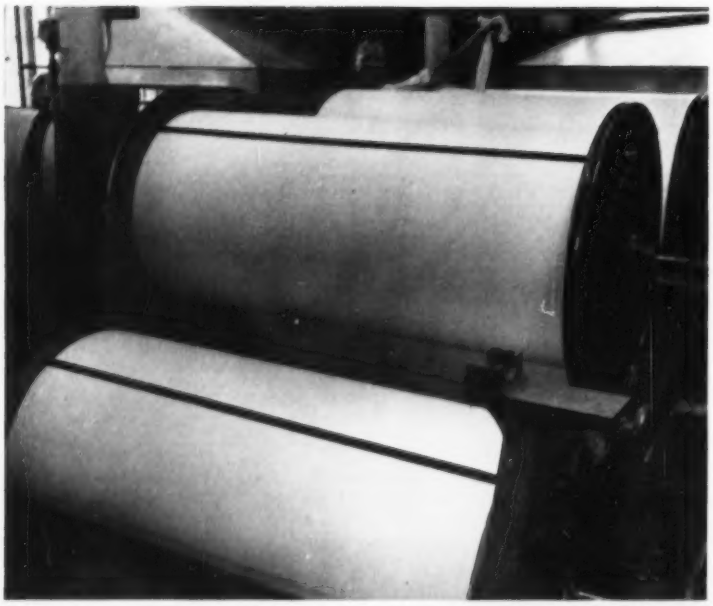
To minimize waste on changing sets, the following method of starting the warp sheet is recommended when using the over-and-under system:

With one slasher man on each side of the creel, take the two sets of ends formed on the warper on the back beam and pull out just far enough to reach the second beam. Turn the second beam so that its tucked-in ends are close to the back beam, and tuck in the ends from the back beam with those from the second beam. Now turn both beams by hand about a half-turn, or enough to bring the ends close to the third beam. Take out the tucked-in ends, pull just far enough to reach the third beam, and tuck in again on the third beam along with the ends from the third beam. Continue as before.

When the yarn ends have reached the fourth beam from the back, begin placing the lease strings. The first string is placed



Above: If section beams are not parallel, the uneven beam heads will cause chafing and rolling of the yarn. Below: It only takes a minute to parallel the heads.



Use of a pressure-sensitive tape will also aid in minimizing the amount of waste from the start-up. A length of tape is placed across the two back beams (photo above) as soon as the yarn from these has been pulled as far as the fourth beam from the back. Tape is run to point just beyond expansion comb (right photo) and then expansion comb is lifted. Thus tape holds the ends parallel for the comb.

Courtesy Iichr Manning, a division of Norton Co.

between the yarns of the back beam and the beam next to it. As this string is pulled forward, during the pulling of the ends, further lease strings are inserted each time the first string comes near another beam. In this manner, the lease strings will be near the size box by the time the new set is ready to be tied to the old. As a result of this, the yarns spread out faster from the knots, and the split rods may be installed in front with a minimum of waste.

This description may be a bit difficult to visualize without a creel before you, but the actual operation is simple. It has the advantage that the yarns spread themselves out rapidly into a uniform sheet, so that by the time the yarns are through the squeeze rolls, the main part of the sheet is already uniform. It takes a bit more care and work than the more happy-go-lucky method of pulling off a few yards into a ball and winding a few yards of ends from each beam around the ball as the warp is carried forward. But the saving in waste is worth the work.

Use of a pressure-sensitive tape will also aid in minimizing the amount of waste from the start-up. A length of tape is placed across the two back beams as soon as the yarns from these have been pulled as far as the fourth beam from the back. This puts one length of tape on each side of the warp, and the yarns from the other beams stick to this tape as it is moved forward. The tape prevents the yarns from converging toward the knots, so that the expansion comb may be swung up into the warp as soon as the tape reaches that point on the slasher. Thus, there are only a very few yards of waste.

In deciding on use of tape, one may consider that the cost of the tape per doff by this system is practically equivalent to one yard of waste. If one yard can be saved, it is economically worthwhile, as well as convenient.

The lease strings are inserted at a short distance behind the tape when tape is being used.

The new set is tied to the old set by six or eight knots across the warp. Raise the immersion roll and squeeze rolls until the knots have been drawn past, then lower the squeeze rolls, leaving the immersion roll up. This will size the yarns just sufficiently to make counting-in easier.

When the warp sheet has become uniform at the front of the slasher, raise the expansion comb then expand it as much as possible for ease of counting-in. Counting-in is easier to do properly when starting in the middle and working toward both sides. However, this is not practical on pattern warps—with patterns the counting-in should be started from the side.

On completion of counting-in, the immersion roll is lowered.

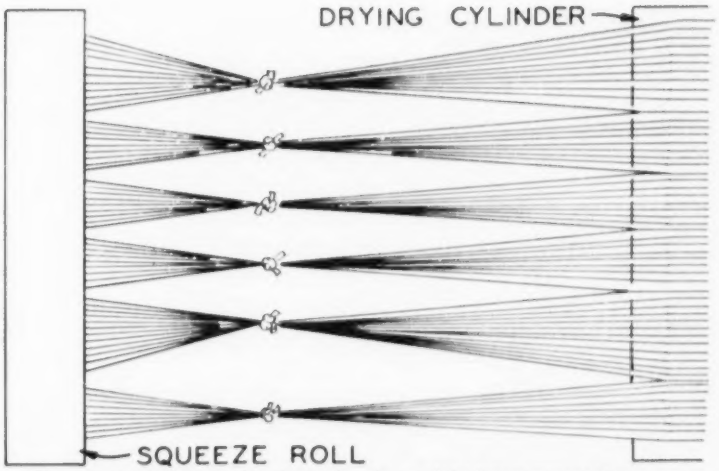
When there is excessive soft waste in slashing operations, the cause may often be inefficient warping, as well as uneven tension on the beams in the creel. If more than one warper is used, the beams should be marked to show which warper did the winding. It can then readily be determined if one warper is measuring consistently different from the others, and the proper adjustments can be made. Another thing to look out for is excessive slippage on starting and stopping of the warper. The measuring device itself must work accurately in conjunction with the machine.

Some figures reported during slashing conferences show that soft waste runs from 0.1 to 1.0 per cent in most mills, and that proper operations with long runs should enable attaining the lower figure. Hard waste (sized waste) will run in these same mills from 0.1 to 0.8 per cent.

Leasing. Laying the lease strings across the warp at the back of the slasher is simplified if a stick with a notch in one end is used to put the lease strings across. The strings (either twine or waste warp) are simply folded over the notch, the stick with the string laid across the warp, and the stick then removed. Care should be taken in leasing that the ends of the strings are folded over onto the warp just before running into the size, to prevent tangling in the machine parts.

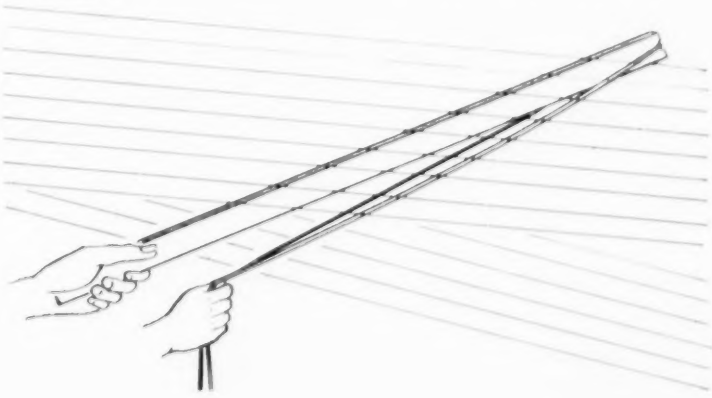
After passing through the size, the lease strings should be grasped at each end by the slasher tender and his helper and moved backwards and forwards a foot or two before allowing them to go on over the dry cans. This will help minimize the sticking of the strings to the warp yarns at the front of the slasher. It is also well to note that the lease strings should be as small as possible consistent with ease of handling. Large strings lift the squeeze rolls and leave excess size around the strings, causing difficulties with sticking at the front.

The lease strings should be about 18 to 24 inches apart, and the slasher moved up for each one each time the split rod is inserted, in order to prevent heavy roller



The new set is tied to the old set by six or eight knots across the warp.

When laying the lease strings at the creel, the job is simplified if they are placed with a notched stick. When ready to take the lease, the helper or man on the next slasher can quickly assist in picking them up.



Before lease strings go into size box, lay them back over the warp sheet so they will not become tangled in the machine parts on their travel through the slasher. Here the operator has taken a lease for a warp passing through two size boxes; he takes the extra precaution of tucking the ends of the lease strings under a few threads; no danger of pulling out.

To minimize the sticking of the yarns, the lease strings should be moved backward and forward a foot or two at this point, before allowing them to go over the drying cans.

marks on the warp.

If the slasher stands for only a short period, the size will still be fluid enough so that the squeeze roll can squeeze most of it off, leaving only a faint roller mark. However, if it is stopped for more than a minute or two, the size will set, and a very strong and definite roller mark will be obtained.

The problem of when or how often to run a lease is best answered by the experience of the individual mill. A lease should, of course, be run when obviously needed due to break-outs or loose ends, but at a minimum of every other loom beam. The need will be determined by the quality of the fiber, the spinning, the yarn count, construction, etc.

The slasher operator should be responsible for watching his running closely to tell when leasing is needed. Unless the yarn is weak and has many breaks, requiring leasing to prevent an excessive number of crossed ends, leasing should not be done in the middle of the loom beam. Every unnecessary slowing of the slasher produces unnecessary variations in the size coating, and generally gives a few yards of overdried or baked yarns, which will weave badly. Lease should be made just short of the point where the warp will be cut when doffing.

Good practice demands that leases should be counted. For one reason or another, though, it may be useful to know how leases are struck.

To prepare to strike a lease, tape the warp sheet at the size box three yards in front of the lease strings, being sure that enough yarn has been run to give a full even spread. At least six knots should be used in tying the new set to the old, in order to accomplish an even spread faster and to avoid waste.

Bring the tape to a position just in front of the expansion comb. Raise the comb through the yarn. The yarns are then counted to the

Roller marks will be on the warp if the slasher is stopped for more than a minute or two.

selvage, starting about four to six inches in from each selvage. After starting slasher, any yarns obviously out of lease may be repicked.

It is much easier to strike a good lease on heavy sley warps than on medium or light sley warps because the heavy sley tends to be more uniformly dispersed. At the same time, the damage from a badly struck lease will be more severe on heavy constructions, especially twills and sateens, where a uniform smooth face on the cloth is important.

Slasher Speed and Drying. The desire to run the slasher at the highest possible speed to obtain production must be balanced by the need for obtaining proper drying. In order to dry yarns rapidly, high temperatures would be required, and the yarn will be heated too much at the points of contact with the drying cylinders, giving a local baking condition. (There is, of course, no objection to increasing slashing speeds by addition of cylinders, giving more drying surface.)

Drying time is the limiting factor on slasher speed, and as soon as it is determined how rapidly a set may be run to obtain proper drying, the speed should be held as nearly uniform as possible in order to get uniform sizing. Experiments made by the Shirley Institute, among others, show that the amount of size picked up by the yarn increases with increase in slasher speeds, all other things being constant. This is probably because there is less dressing off of the warp by the squeeze rolls at the higher speed.

To have a well-sized warp, the cylinder temperature should be maintained within a top temperature limit of about 240 F. It must be admitted that setting a limit like this is somewhat controversial, and that many mills have operated at higher temperatures than this without running into troubles. For exceptionally heavy sets and heavy counts, this temperature may be increased to enable the slasher to run at reasonable speeds. However, with finer counts it is more important that the size film be in good condition, and not be baked till brittle.

It has simply been our experience that overdried, baked yarns do not run as well as those properly dried. Further, when a high-temperature can is stopped, for leasing or cutting laps, it is often observed that the size film is so thoroughly baked that it is slightly browned.

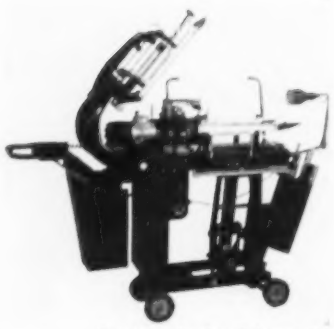
Under normal conditions, with no superheat of the steam, and with the steam in equilibrium with a small amount of condensate, the steam pressure may be used as an indication of the temperature. Although steam at a high pressure will be somewhat superheated when released through a reducing valve to a lower pressure, during normal operation it will rapidly come to equilibrium with the condensate present in the cylinder.

It is generally considered good practice from the standpoint of slasher production, weight regain, added strength, and pliability to leave a comparatively high percentage of moisture in the yarn. A fairly dry yarn will, of course, pick up some moisture, but, due to the hysteresis effect previously discussed, at equilibrium will not contain as much moisture as one which had not been dried below its natural moisture content.

At the same time, under certain conditions some weavers prefer to dry their cotton warps to as low as 6½% moisture. This is especially true on heavy twills where the drier warps do not tend to form lint balls as readily. On heavy sley warps tying-in difficulties may sometimes be encountered if the warps are a little damp. On further drying, the ends will have a tendency to twist or curl in the normal mill atmosphere. This tendency can often be eliminated by drying the warps down to 6½%.

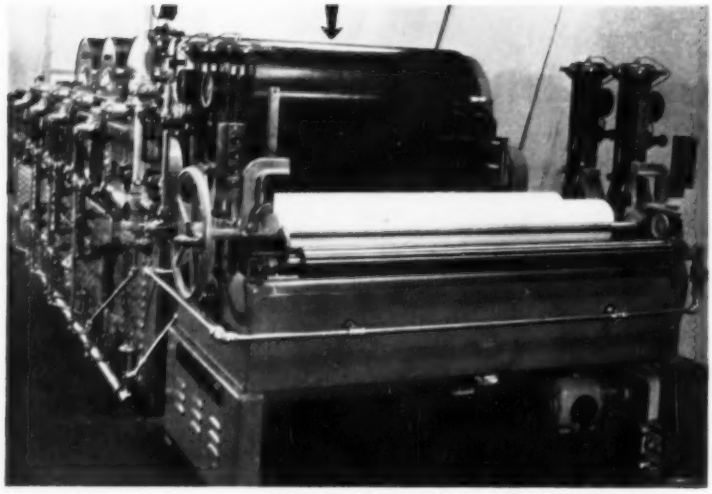
Bark cloth and similar types of weaves, on the other hand, should have higher moisture content in order to maintain the maximum of elasticity. *(More next page)*

How often to take a lease is up to the individual mill and its requirements for efficiency in slashing and weaving. The general rule is that a lease should be taken at least every other loom beam. Here the lease strings have been laid by the slasher operator; he then gets help in placing the strings from the adjoining operator.



Courtesy Barber-Colman Co.

On heavy sley warps, tying-in difficulty may be encountered if the warps are too damp when they come from the slasher; when they dry out later, the ends will twist and curl.



Courtesy Cocker Machine & Foundry Co.

The first three cylinders of this nine-can slasher, which is built for heavy work on all fibers, are coated with Teflon to prevent yarns sticking to them.

(Continued from preceding page)

Generally it is found that the best range for drying is to approximate that of the natural moisture of the yarns: 7½ to 8½% for cotton, for instance. However, where the above troubles are encountered, it is recommended that drying to slightly lower moisture content be tried. Drying below 6%, besides being wasteful of steam and slasher production, may damage the size film to the extent where no amount of humidity can restore its full elastic properties. A baked warp is brittle; it ties and weaves poorly and may give inferior cloth.

Like bread that is toasted, overdried starch films will not regain their desirable properties even when brought back to their optimum moisture content.

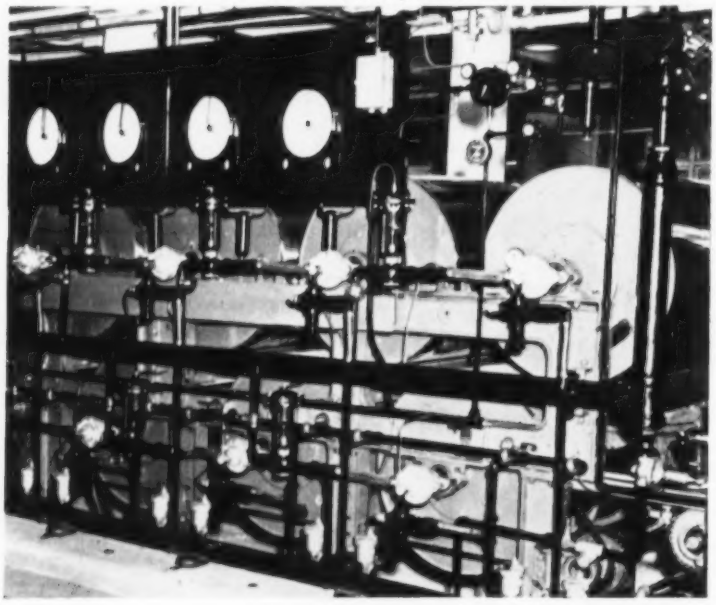
In connection with this, it should be noted that the results of some research work done in Germany on designing of starch-base sizes show that a starch film which has been over-dried is much more difficult to desize than one which has been dried normally. In desizing, the starch requires a certain amount of time for swelling, before the enzyme can penetrate thoroughly and begin to do its work, and an overdried film must be soaked for a longer time, or be soaked in the presence of alkali, in order to swell as much as a film which has been left with some moisture.

In the other direction, cotton yarns which contain over 9 per cent of moisture may be slightly gummy or sticky. At least, the size film will still be soft. It will not have the proper strength to protect the yarn from abrasion, or to prevent peeling back of fibers which forms fuzz-balls and matting. Over 10 per cent of moisture will also leave the yarn in an ideal condition for susceptibility to mildew attack.

The same general comments apply to rayon at 12-14 per cent, and 6-7 per cent is optimum for acetate.

Generally, filament yarns are handled at lower temperatures than spun yarns, and they are practically always handled on multi-cylinder slashers, which have been found to be least disturbing to the physical make-up of the yarns. Some trouble is occasionally had with sticking of these yarns to the cylinders, particularly since the warp is not as near "dry" as it comes off the first or second cylinder as is a warp

Small cylinder slasher with individual cylinder temperature controls.
Courtesy West Point Foundry & Machine Co.



coming off the first cylinder of a large-cylinder slasher. To obviate some of this trouble, it has been the practice to wrap the first two or three cylinders with cloth, which has to be replaced from time to time as it becomes contaminated.

This is, however, a nuisance, as well as interfering with drying by cutting down on the heat transfer from the cylinder surface. More modern practice is to have the first two or three cylinders coated with Teflon, which has excellent release properties. Almost no sizing materials will stick to a Teflon-coated surface, and the elimination of any sticking tendencies results in a much smoother size film, and a smoother-feeling warp.

In the operation of multi-cylinder slashers, it is customary so to control the cylinder temperatures that the first cylinders are cooler than the center cylinders, and also the last cylinders are cooler. Often the very last cylinder may be run at room temperature in order to help cool the yarns before being wound on the loom beam.

The reason for having the last few cylinders cooler is that it minimizes the chance of overheating the size film or the yarns, thus protecting them from damage. The author has not yet been able to determine whether any definite benefit derives from having the first cylinders less hot.

The actual temperatures set on the cylinders will depend on the sensitivity of the size ingredients and the yarns to heat. These are best determined by the maker of the size ingredients being used. As examples of what has been recommended for a seven-cylinder slasher, we give figures below:

For slashing 75-denier acetate, 200-sley, using a styrene-maleic copolymer:

Cylinder 1, 150 F; 2, 160 F; 3, 170 F; 4, 200 F; 5, 210 F; 6, 190 F; and 7, room temperature.

For slashing the same yarn with a gelatin size:

Cylinder 1, 190 F; 2, 200 F; 3, 210 F; 4, 220 F; 5, 210 F; 6, 200 F; and 7, room temperature.

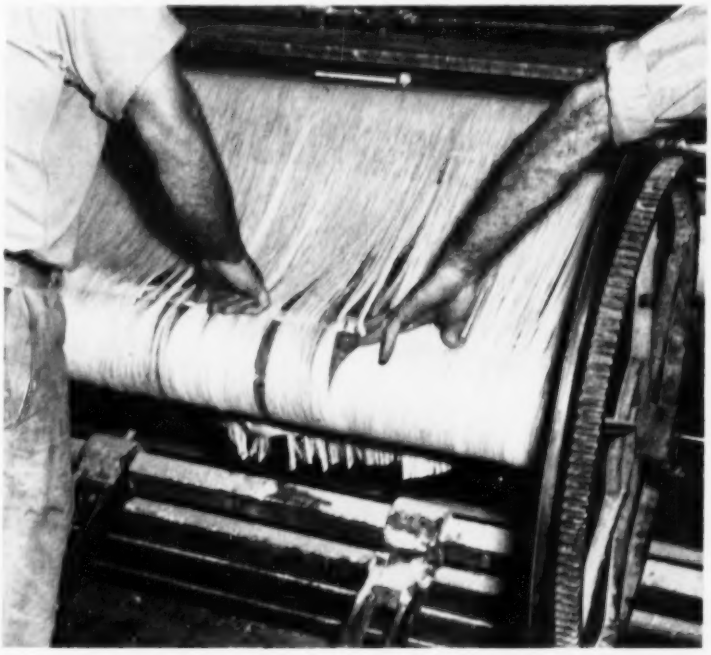
Fine adjustments such as the above are not usually necessary. Group control of the cylinders, with three cylinders per group, has been found quite satisfactory in many cases, particularly if control is so set up that the last cylinder may be cut out if desired.

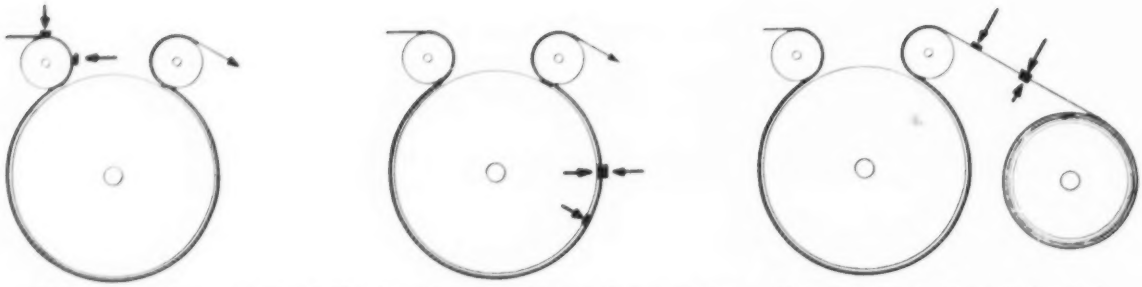
Doffing. To prevent waste and to make things easy for the tie-in operator, the loom beam should be doffed with care that the ends remain parallel. The simplest and surest way is the following:

Place a strip of gummed paper tape (pressure-sensitive paper tape is easier to handle) across the warp on the front of the calender roll, just before the warp gets to the drag roll. Place a second strip across the warp on top of the roll, about two inches from the first

Courtesy Behr Manning

Gummed tape or pressure sensitive tape applied to the warp before doffing the full loom beam speeds the doffing operation, reduces waste, and makes starting the new beam easier. Tenders in photo below use tape, and also insert a wooden wedge into the beam barrel to hold the warp, insuring a longer runout at the loom.





Method of applying tape for doffing loom beam. (Left) two pieces are first applied on first calender roll; (center) third piece is applied just before warp goes on the second calender roll; (right) tape in position for cutting.

strip.

Move the slasher forward at creep speed until the first tape has come around the drag roll and just before it goes under the second calender roll. The pressure of the warp holding the tape against the drag roll, plus the pressure at the nip of the calender roll with the drag roll will serve to make the yarns adhere well to the tape.

Place a third strip of tape across the warp on top of the first strip so that the second calender roll nip will press the two tapes together, with the yarns sandwiched in between. Start the slasher again, stopping it just before the tapes reach the loom beam. Fold the extending ends of tape under. With the yarn under tension, and held by the tapes, it is very easy to cut the warp between the first and second tapes with one quick slice of a sharp knife. Two or three short pieces of tape will then serve to hold the end of the warp in place on the loom beam, and it will remain in good condition for rapid set-up in the tie-in machine.

To start the next beam, simply start the slasher at creep speed, run until the tape is long enough to go around the beam barrel, then reach through the warp, grasp the tape and hold it against the beam barrel until a few inches more of warp have been wrapped around. These will catch the tape and hold it, and the slasher may then be operated at normal speed. This is about the simplest way of starting a new beam, and will keep the ends parallel on a loom run-out as far as it can practically run. This latter operation is a bit easier if handled by the two men who have just lifted off the doffed beam, as the tape can be held at both sides of the beam, rather than in the center.

Many operators have found that they can further utilize tape in such a way as to assist the operation of the tying-in machine man. An extra piece of tape is placed on the warp so that it will be on the loom beam, about two or three feet from the cut ends. (The optimum distance depends on the construction of the tying-in machine — and will usually be different for a portable machine than for a stationary machine.) This tape assists materially in keeping the warp ends parallel for the tying-in operation.

For such purposes, it is often found that pressure sensitive tapes are superior, since they may be removed from the warp without leaving small bits of glue and paper behind. They, therefore, do not interfere with pulling the warp yarns through the drop wires, heddles, and reeds after the knots have been tied.

Note how tape, applied at the slasher when this beam was doffed, holds the warp ends in position so that need for brushing by the tying-in machine operator is minimized and fewer crossed ends are encountered. *Courtesy Behr-Manning*

(Importance of washing down the slasher, how to handle selvages, tension and beam density, and cleanliness are some of the subjects discussed by Dr. Seydel in the article to appear in the February issue.—The Editors)

Setting control limits for a variety of yarns in several mixes

How to determine yarn strength control limits

by E. G. Field
E. G. Field & Associates
Atlanta, Ga.

WHEN A cotton mill is manufacturing a variety of single yarns in several mixes, with some orders for small quantities that are run for only short periods, there may not be sufficient routine tests from enough days to provide an adequate amount of data to compute reliable breaking strength experience on some yarns. Moreover, the available information may be from only a few days of experience, and so does not adequately represent a long term average for that particular mix.

For a preliminary start in observing the variation in breaking strength, control limits may be set from the use of combined experience from a series of yarn numbers. In addition, some simple figures may be determined for comparison of the mixes so as to observe when the quality in the mix is changed, seasonally or otherwise.

There is a fundamental relationship in the breaking strength tables that should be understood. The most used tables are dependent upon Sheldon's formula that has been used in many text books. In Sheldon's Breaking Strength Chart No. 6 for carded yarn, there is a formula:

$$S = \frac{1600\ (1 \pm .11a \pm .01b)}{C}$$

where S is the strength in pounds, C is the counts of yarn, a is the difference in sixteenths of inch of staple over or under one inch, and b is the difference in number of yarn below or above 28s. The constant of 1600 is for 28s carded yarn of 1" staple cotton.

Before going into the composition of data from various yarn numbers, it is desirable first to understand what can be done with the data for a single yarn number. For this purpose, the laboratory test reports in a three-month period were tabulated for one yarn number, as shown in Table 1.

These samples were run on different dates, not consecutively, so they represent considerable experience in batching the same mix.

IN TABLE 1, the data on 18.5s

TABLE 1

BREAKING STRENGTH CONTROL LIMITS
TABULATION OF TEST REPORTS
103 Mix — 18.5s Warp
3rd Quarter 1956

		Grains		Pounds	
1956		**Average**	**Range**	**Average**	**Range**
July	3	54.6	5.6	103.	22.
	17	53.2L	4.1	106.H	18.
	27	54.3	2.2	98.	16.
Aug.	3	56.5	7.8H	100.	24.
	7	55.2	3.1	97.	15.
	14	56.3	4.3	100.	21.
	24	56.7	2.2	99.	16.
	28	56.7	4.3	102.	13.
Sept.	5	51.3L	3.2	89.L	12.
	7	57.3H	3.1	102.	17.
	10	56.7	3.3	96.	11.
	12	56.9H	3.7	96.	11.
	19	54.6	2.0	96.	22.
	20	55.2	1.9	93.	10.
Total	14	775.5	50.8	1377.	228.
Average		55.39	3.63	98.4	16.3

Note: Eight observations per test

Computation of Control Limits

Average range	3.63	3.63	16.3	16.3
Constant A_2 or D	× .373	× .864	× .373	× .864
Limits	± 1.35	± 3.14	± 6.1	± 14.1
Average	55.39	3.63	98.4	16.3
Control limit upper	56.74	6.77	104.5	30.4
Control limit lower	54.04	.49	92.3	2.2

Computation of Strength

Dividend for grains per 1/7 hank	1000.
Average grains for 1/7 hank	÷ 55.39
Average yarn number	18.05 + 9.95 = 28.00
Average pounds breaking strength	× 98.4
Average count-strength product	1776.
Divisor for Yarn number	÷ 1.10 = 1 + .01(9.95)
Basic count-strength product for 28s of 1" staple	1614.
Sheldon's count-strength product for 28s of 1"	1600.

are used in the computation of control limits. By sight, these control limits may be applied to the tabulations. A few tests will be noticed as being outside of these control limits in weight and in strength, while the ranges will be observed as generally well within their control limits.

If the number of tests is sufficient and no facility is desired in setting up data for other yarn numbers, the quality control engineer may stop here. In practice he often will find, in comparing the results on different yarn numbers, that the data and limits are somewhat conflicting, so will require considerable adjustment to make them relatively consistent.

When the breaking strength is to be studied, then another computation may be made as shown at the bottom of Table 1. The average grains for 1/7 hank were used to compute the average yarn number. This average yarn number was multiplied by the 98.4 average pounds of breaking strength to arrive at the 1776 for average count-strength product, formerly called the break factor.

The yarn number divisor of 1.10 was determined from the difference between the average yarn number and the basic 28s that was selected by Sheldon.

Finally, the average count-strength product at 1776 was reduced to the basic count-strength product at 1614—very close to the original 1600 developed by Sheldon for the 28s carded yarn of 1″ staple.

TABLE 2

BREAKING STRENGTH CONTROL LIMITS
ANALYSIS OF MIX 103 BREAKING STRENGTH
3rd Quarter 1956

Warp Yarns	Constants	18.5	Total
Number of Tests		14.	200.
Sum of R		228.	4553.
Sum of A$_c$R	.373	85.0*	1698.3
Sum of Pounds		1377.	28654.
A$_c$R per Pound		.06173	.05927
Sum of grains		775.5	15455.9*
Average range		16.3*	—
Average pounds		98.4*	
Average grains		55.39	—
Average count	1000.	18.05	—
Staple difference	16.	—	—
Staple constant		× .11	—
Staple adjustment		—	—
Counts difference	28.00	+ 9.95	—
Counts constant		× .01	—
Counts adjustment		+ .10	—
Factor multiplier		1.10	—
Count-Strength Product			
Sum of pounds × count actual		24855.	367157.*
Sum of pounds × count basic for 28s of 1″		22595.	321977.
Average actual		1776.*	1836.*
Average basic for 28s of 1″ staple		1614.*	1610.

Note: Sample size is 8.
* Indicates detail that may be omitted

WHEN DATA are available for several yarn numbers, then a choice may be made:

1. Study the data for each yarn number, set control limits individually, then adjust the results, and estimate any other numbers.

2. Combine the data for the several numbers so as to arrive at composite results that will include the many tests and will apply to the full range of all yarn numbers.

The 18.5s yarn was carried into such a combination. There were 14 test reports on the 18.5s yarn, and these now become a part of 200 tests from all of the various yarns tested from this mix.

While the individual yarns would have to be separately computed by use of the proper constants and other considerations, when they can be worked as a composite group the clerical work is greatly reduced by adding the basic data and then applying the constants to obtain immediately the consolidated results. The totals of weight, the strength, and the ranges as shown in Table 1 were carried forward to a work sheet for the Analysis of Mix 103 Breaking Strength, Table 2, that includes the various yarns of similar mix, twist, and other characteristics.

Going back to Sheldon's formula, the effect of yarn counts is given as ± .01 of the difference in the yarn count from the basic 28s. This has been shown in Table 2 as a factor, where the difference of yarn count from 28.0 has been shown and then set out as a multiplier for future use.

As shown in Table 2, the composite average count-strength product can then be computed for various yarns and reduced to the 28s basic count-strength product. For practical purposes, the composite average using many tests is much more reliable than any individual averages from only a few tests. In this instance, when using 200 tests, the 103 Mix shows a total or combined basic count-strength product average of 1610—again close to the 1600 developed by Sheldon.

Had the mix been made from cotton other than 1″ staple, then the factors would have included both the difference in staple length and yarn counts, so as to develop the actual experience comparable to the 1600 constant for 28s carded cotton yarn of 1″ staple. In turn, that constant could be modified to its equivalent for 28s carded yarn of any other staple.

The computations in Table 2,

especially when using the totals, can be readily done in a short time. The total A_cR per pound (at .05927 for limit per pound) is significant and can be used to compare periods (daily, weekly, monthly, quarterly, etc.), and to compare between mixes, products, etc.

The 28s total basic average of count-strength product (at 1610 for 200 tests) is also significant and can be compared with other experiences, mixes, and plants. This ability to compare mixes in different plants, after reducing to a common 28s of the selected cotton, is important.

THE INFORMATION obtained in making an analysis, such as in Table 2, is not only useful for review and its significant information, but it also can be used in setting up preliminary control limits for any of the yarn numbers to be made within the classified mixes, twist, etc. These limits can be used for charting the actual test data, and are especially useful in giving the laboratory some definite advance information as to limits so that any tests showing exceptions may be immediately reviewed, repeated, or further studied to locate the possible contributing cause, while the yarn is still being made and the spinning frames can be examined.

The procedure for setting up limits is somewhat the reverse of the analysis. The standard yarn number is used to obtain the multiplying factor representing the difference from the basic 28s. That multiplier is then applied to the Table 2 experienced constant (at 1610) of combined basic count-strength product for 28s yarn of that mix and product.

The resulting standard count-strength product is divided by the standard yarn number (or count) to determine the standard breaking strength in pounds.

From the analysis in Table 2, the limit per pound is obtained for the particular mix and product, and this combined factor identified as A_cR per pound (at .05927 from 200 tests) is applied to the breaking strength standard pounds to determine the A_cR by yarn numbers.

The upper and lower control limits are then computed for the breaking strength in pounds. In similar manner, the upper and lower control limits are computed for the range in pounds of breaking strength for any yarn number.

TO ILLUSTRATE how these limits may be used, an example is presented in Figure 1 of a customary chart. The $\overline{X}$ section at top shows the successive tests for

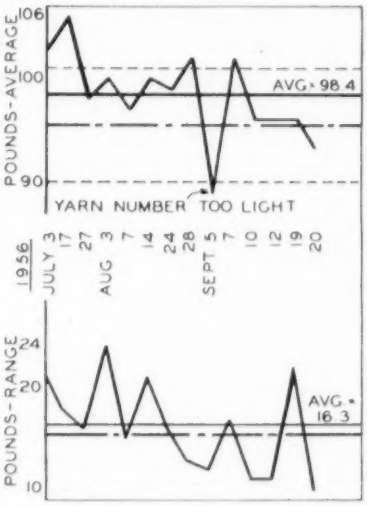


Figure 1. Breaking strength chart in pounds per 120 yards for 18.5s warp, Mix 103, third quarter 1956.

breaking strength, and in this case has a few points outside of the control limits, with those on the lower side possibly being dangerous while those on the high side might be costly or bonus.

In Figure 1, the R section at bottom shows the ranges in the successive tests for breaking strength, and in this case no points are close to the limit lines. In general, the laboratory tests on breaking strength may be expected to show data that are within the range limits so that usually no chart need be kept on range in breaking strength. However, it is desirable to know the control limits at the time of testing so that exceptional cases may be noticed in the laboratory and further examination made of such exceptions.

It may be of interest to note the relative effect of variation as between yarn number and yarn break. Turning back to Table 1, the limits can be calculated as percentages of the average, thus:

Subject	Limits	Average	Variation
Yarn No., grains	1.35	55.39	2.44%
Yarn break, lb.	6.1	98.4	6.2

Accordingly, the variation in breaking strength pounds is 2.54 (6.2 ÷ 2.44 = 2.54) times the variation in grains representing the yarn number. So in making 18.5s yarn, the variation in mix and machines has about 2.5 times as much effect on the variation in breaking strength as does variation in this yarn size.

THE CHART in Figure 1 contains control limits computed as standard from the large volume of data in the 200 tests that included 1600 observations. A glance back at the limits calculated from the data on only the 18.5s yarn, as was done in Table 1, shows that in the new standard from the combined results, a small reduction is made in the limits and the average breaking strength is more definitely placed as a standard, thus:

Pounds of Breaking Strength	Standard from 200 Tests	Average from 14 Tests
Control limits upper	101.4	104.5
Average pounds	95.7	98.4
Control limits lower	90.0	92.3

There is one significant fact in Table 2 that should receive some comment. The limits were set at .05927 per pound, which is approximately 6% of the average. The breaking strength may vary within ± 6% (or total of 12%) and still keep within statistical control that accompanies chance causes within this mix.

The individual tests, if well scattered on both sides of the standard in Figure 1, would indicate that the standard might be reached by the average. But they do not of themselves give any comparative information to suggest that any one test can be confirmed by repetition.

No significance can be immediately attached to any comparison of processing methods, unless the average result of a single test from eight bobbins made by one method will go outside of the ± 6% limits. Study of any difference in methods, requires analysis of variance significance, which is outside the purpose of this paper. At this time, an examination is being made of breaking strength control limits over a wide list of possible

yarn numbers, and the rating of the uniformity of the mix.

In explaining the purpose of this study, mention was made of the difficulty sometimes experienced when many yarn numbers and products are being made, with some in short runs. The data from such a variety of tests can be combined so as to have the benefit of many tests in determining some basic figures for observing the changes in mixes and in conditions.

The analysis of data concerning breaking strength has brought out significant facts concerning the limits for pounds and the basic count-strength product for 28s yarn of specific mixes. In turn, the facility is provided for setting up preliminary control limits for pounds of breaking strength, and for range when necessary, on any yarn numbers of specific mixes.

More mixes may be necessary for color in yarns, or for cheaper selling prices, but they may not be warranted by average results in breaking strength. The addition of control limits helps give a positive view to the understanding of relative breaking strength by mixes.

Suggestions for dyeing and finishing Verel

by William R. Ivey, Jr.
Tennessee Eastman Co.

Abstract*

■ THE PREPARATION of Verel acrylic fiber for dyeing follows the same general pattern as with other man-made fibers. Desizing is necessary to insure against unevenly dyed fabrics. Scouring or boiling-off in a neutral bath with a detergent is normally sufficient for the removal of dirt and lubricants acquired in processing.

If it becomes necessary to use an alkaline scour, a mild alkali such as disodium phosphate or tetra sodium pyrophosphate should be used. Like other acrylics, Verel is discolored by the presence of strong alkali.

Verel fiber, as it is produced, is quite white and will not normally require bleaching. If it becomes necessary to further whiten the fiber, a bleach of sodium chlorite and oxalic or formic acid is recommended. This bleaching method, in addition to further whitening Verel, is effective on other fibers as well when a blended fabric is being processed.

Peroxide or chlorine bleaches are not recommended for Verel alone or in blends, as a discoloration rather than bleaching is the result.

IN DYEING Verel, there are three classes of dyes that are considered the most effective from a standpoint of fastness and economy. The most important of these classes are the neutral dyeing premetalized dyes, which generally offer the best all-around fastness properties on Verel. Wash fastness of 140 F over the full shade range may be accomplished; light fastness will depend naturally on the depth of shade.

The dispersed acetate dyes exhibit very good fastness properties, although not generally as good as the premetalized dyes. Brighter shades may be obtained with acetate dyes than with premetalized dyes, but usually some fastness must be sacrificed.

Basic or cationic dyes may be used for specialty fabrics when brighter shades are required than can be obtained with either the premetalized or acetate dyes.

THE METHODS employed for the application of these three classes of dyes are generally the same as are recommended for the fibers for which these dyes were originally intended. Operating temperatures of 180 - 205 F are sufficient to completely exhaust these dyes over the full shade range. In dyeing heavy shades, a dyeing assistant is used to obtain a complete exhaustion of the dye on the fiber or fabric.

Blends of Verel with other fibers may be dyed to almost any desired combinations, either union shades, color-and-color, or color-and-white effects. Verel and rayon or cotton offer a multitude of possibilities, since Verel may be dyed with either the premetalized or acetate dyes and the rayon or cotton dyed with direct dyes, with little if any cross staining.

Blends of Verel and wool offer an outstanding feature in the fact that selected premetalized dyes will dye union shades on the two fibers without extended dyeing periods and without the transfer of dye from one fiber to the other. Other of the commonly used textile fibers may be processed in blends with Verel to obtain a great many color combinations.

IN FINISHING fabrics containing Verel, certain precautions should be observed. Care should be exercised in the finishing operations to preserve the fiber's desirable qualities. Resins commonly used on cellulosic fibers should not be used on Verel since these materials remain on the fiber surfaces and result in an undesirable stiffness or boardiness, causing a decrease in many of the inherent properties.

Blends of the cellulosic fibers and Verel may be finished with reduced amounts of resin, since it appears that the resin reacts selectively with the cellulosic fibers and does not alter Verel. As with other acrylic fibers, any temperature in excess of 300 F should be avoided in all finishing operations, since this will result in a stiffening of Verel.

*From a paper presented at a meeting of the American Association for Textile Technology, Inc.

Textile school deans approve survey of

Job opportunities in textiles

Staff report

TWO actions that are expected to do much to stimulate public interest in textiles and the textile industry were recorded at the Sedgefield Inn in Greensboro, N. C., at the semi-annual meeting of the National Council for Textile Education, which comprises the deans or presidents of the country's ten textile colleges and three graduate institutions.

The first action was approval of the National Council of a survey which will be a study of job opportunities in textiles and of the relationship of these textile colleges with the industries they are serving. Job opportunities at the higher levels are being stressed by these deans in appealing to the high school graduates of the nation as comparing favorably with all other industries and surpassing those of most.

Through this survey, which will be made by A. D. Little, Inc., of Cambridge, Mass., young men will be given a clearer idea of these career opportunities, it was stated by *Dr. L. H. Hance*, president of the Institute of Textile Technology, Charlottesville, Va., and president of the National Council.

Said to be equally important was the formal recognition by the Education Committee of the American Cotton Manufacturers Institute that this industry, which is vital to the economic welfare of the nation as well as its security, is looking to these textile colleges for the future leaders in this field.

Textile colleges will have the wholehearted cooperation of the textile industry generally in keying curricula and other fundamentals in courses to rapid changes that are taking place, it was emphasized at these meetings.

Julian Robertson, president, Erlanger Mills, Lexington, N. C., and chairman of the ACMI Education Committee, said it would recommend a study of job opportunities from a different approach, to break down the number of textile jobs in the $6,000 to $8,000 a year bracket; in the $8,000 to $10,000 bracket; in the $10,000 to $15,000 bracket, and so on. This proposed study would also inquire regarding the type of men holding these jobs, and the character of training background which they have.

Newly elected officers of the National Council for Textile Education are, left to right: Edward T. Pickard of Textile Research Institute; Dr. Martin J. Lydon of Lowell Technological Institute; Cleveland L. Adams of Alabama Polytechnic Institute; and Raymond K. Flege of Texas Technological College. Dr. Lydon was named president for the coming year, Mr. Adams, vice-president; Mr. Flege, secretary; and Mr. Pickard, treasurer.

There were numerous other developments at the meetings of the textile college deans that could be considered encouraging for textile education as well as for the industry itself.

It was assumed at these meetings by the deans, as well as by mill executives who were present, that there would be sharp turnabout in the textile industry's public relations, starting almost immediately. Beyond any doubt, it was ventured by *Malcolm Campbell*, dean of North Carolina State College Textile School at Raleigh and chairman of the Council's Public Relations Committee, the determined efforts of the textile industry to thwart the heavy inflow of Japanese textiles during the past year and a half to two years and to unfortunate publicity to some ills rather than the attainments of the industry, had backfired in a number of ways, scaring young men from considering textiles as a career despite the opportunities for advancement to positions of responsibility and attractive compensation.

MARION W. HEISS, vice-president of Cone Mills Corp., told the school officials that to get a cross section of opinion as to the present inadequacies in training and recommendations for improvement, he contacted a number of mills requesting that they survey their textile school graduates, some comparatively new ones and some of the old vintage.

Mr. Heiss reported that most of these men, young and old, stated that students should have a better concept of merchandising, knowledge of costs, efficiency, and the economics of manufacturing; should be trained in public speaking, personnel relations, and how to handle grievances; in establishing production and quality controls; should be kept abreast of new equipment and processes, etc.

Two suggestions offered by this mill executive were (1) the creation of a general advisory committee for the Council to be composed of college deans and top flight representatives of the textile industry whose function would be to set up a continuing program to examine educational and training programs and techniques, and

(2) that each college have an advisory council composed of representatives of various segments of the textile business whose function should be to collaborate with and so assist the deans and other college authorities to convert the needs into action. "Industry's counsel can easily be translated into dollars for our industry through progressive, modern, efficient training courses," Mr. Heiss said.

M. EARL HEARD, vice-president of West Point Mfg. Co. and chairman of the Cotton Task Group of the President's Commission on Increased Industrial Use of Agricultural Products (see T.I. for December, 1956, p. 96), informed the Council that the government might undertake one of its greatest research projects. While no details were available at the time, Mr. Heard said that the prospects were such that they should command the interest of the textile colleges and of the industry generally.

The deans voted a resolution for the endorsement of the Cotton Task Group project. Under this plan, the textile schools will be able to get free of charge the cotton they need throughout the year and also the cotton standards

Spencer Love, left, chairman of Burlington Industries, chats with Dr. Lydon at the concluding luncheon session. Mr. Love told the group that persons seeking executive careers in the textile field should have a broader education and perspective — their training should include more than technical knowledge of machine operation; they should understand the over-all picture of business operation, finance, and sales.

required, according to *William J. Martin* of the U. S. Department of Agriculture extension service at Clemson, S. C.

TERMINATION of degree programs in textile engineering and textile chemistry is under consideration at Rhode Island School of Design, Prof. *William D. Fales*, chairman of the school's Division of Textiles, disclosed to the group. Emphasizing that the contemplated action should be described as a readjustment rather than an abandonment of the college's textile programs, he explained that studies are now being made to determine how elements of textile technology instruction might be retained in order to broaden the School of Design's offerings in apparel and textile design.

Listing the primary reasons for the college's investigating the feasibility of such a shift in emphasis, Prof. Fales cited the consistently low enrollment in the textile engineering and chemistry majors, the urgent need for more space to accommodate increasing enrollment in most of the college's thirteen other areas of instruction, and the School of Design's competitive position as a privately endowed institution located within 75 miles of three low-tuition state supported textile schools providing comparable instruction.

Job opportunities in textiles were discussed at a seminar in which young mill executives of the Greensboro area participated together with the deans and with representatives of the American Cotton Manufacturers Institute.

While in Greensboro, members of the Council were guests of Burlington Industries, Cone Mills, and J. P. Stevens & Co. Next March the deans will meet in Wilmington, Del., as guests of E. I. du Pont de Nemours & Co., Inc.

Survey reveals very active market for used carpet

■ THE BROAD findings of survey of carpet trade-in programs have been released by *Gerald C. Denebrink*, vice-president for sales of C. H. Masland & Sons. This survey, paid for by Masland, was recently completed by a qualified market consultant, he said.

The broad findings are as follows:

1. Retailers in every section of the country are already operating successful trade-in programs. The majority are satisfied with the results. A number of them are planning to expand their operations.

2. Perhaps the most outstanding fact uncovered was that there is a very active market for used carpet. Retailers are able to sell it at a profit.

3. A trade-in program discourages "shopping" for the purchase of new carpet — especially if competitive retailers do not accept trade-ins. As a result, retailers offering a trade-in allowance on used carpet are in a better position to get a normal mark-up on the sale of the new carpet.

4. A trade-in program offers the retailer the opportunity to make double profit — on the sale of both the new and the used carpet.

5. Most carpet offered for trade-in could be re-conditioned for resale.

6. Generally speaking, the sale of used carpet does not conflict with the sale of new carpet. People able to afford new carpet are not interested in buying used carpet. Many people who cannot afford new carpet, are glad of the chance to buy used carpet.

7. Retailers operating trade-in programs report that handling used carpet has not reflected unfavorably upon their prestige or standing. They point out that most of the carpet taken in trade comes from well-to-do customers.

8. Families changing residence are preferred prospects for trade-in sales, because frequently their old carpet is not suitable, for one reason or another, for new homes.

U.S.D.A. spokesman told South Carolina mill men

"1956 cotton best you've had in years"

Staff report

APPROXIMATELY 200 persons attended the fall meeting of the South Carolina Division of the Southern Textile Association at Clemson, S. C.

Joe Jenkins, chairman, presided at the meeting which appeared to set a new attendance record for this location.

NEW COTTON CROP. *J. M. Cook*, U. S. Department of Agriculture, spoke briefly about the new cotton crop spinning test results. According to Mr. Cook, this cotton produces more fly in processing. North Carolina and Mississippi cottons are slightly longer in staple on the average. Georgia's crop is slightly shorter in average staple.

More strength is evident throughout the cotton belt, although the fiber is slightly lower grade in appearance. After a few months in storage this should be the best crop of cotton the mills have had in years, Mr. Cook asserted.

In discussing the increased fly in processing, Mr. Cook stated that the cause lies in additional fiber breakage within the processing machinery. A partial remedy mentioned was to increase the amount of moisture in the stock. Another suggestion was to mix older cotton with the new crop.

More comber noils taken from new crop cotton indicate that there is more fiber breakage, although the noils are probably of shorter length. The breakage is probably due to dryness, and since cotton usually reaches regain equilibrium at spinning, the bales should be opened and left for about 12 hours to condition before processing.

OPENING EQUIPMENT. *Joe Delany* of Joanna (S.C.) Cotton Mills discussed experience with the SRRL opener. According to Mr. Delany, there is no evidence of damaged fibers upon passing through the SRRL opener, and after learning how to run the machine his mill gives it a "clean bill of health."

Harvey Cleveland of Woodside Mills briefly discussed the "Axi-Feed" and "Axi-Flo" equipment which he described as simple and efficient (see T.I. for December, 1956, pp. 95-96). His mill uses two lines of each, including a No. 7 conveyor, magnet, No. 11 and No. 12 openers. Production is 1600 pounds per hour, 200 pounds per hopper.

The mix is fed immediately upon putting it down and without any bloom. It is easy to install and maintain the "Axi-Feed" system, he said. Results have shown that the machines remove twice the amount of dust and droppings taken out by the old machines. There are about 30% more droppings than vertical opener produced in this mill, and stock is opened better. Waste contains few long fibers. Card sweeps and strips both decreased upon using this equipment. Laps are better, toppings are better, there is less dust in the card room, there are fewer neps, and cloth is better, all of which make this a worthwhile investment, according to Mr. Cleveland.

Robert Liner of Greenwood Mills discussed opening equipment in his mill. Mr. Liner stated that in his opening room the No. 12 and vertical openers have been eliminated. Stock goes from No. 7 to No. 15, to No. 16. These are primarily openers but some cleaning is done, he said. Percentagewise, there are more droppings in evidence at the No. 12 than formerly.

Tests on SLM and M cottons with no change in settings showed more droppings through opening and picking — about 1% more droppings on SLM as compared to M. In this instance a better job was done with SLM than with M, according to the speaker.

On cards, there was little difference, with about ¼% more from SLM. There was not much difference in skein break and uniformity, and no difference in quality with two grades lower stock. Upon removing the wire from the fringe roll due to an accident, it was found that nep count dropped 25% in this mill. Actually the wire was pulled off by a choke.

TOP DRIVE SPINDLES. *Bo Etters* of Reeves Brothers discussed anti-friction top-drive spinning spindles. Mr. Etters said the advantages derived from these spindles are as follows:

(1) Up to 20% increase in spindle speed.

(2) 10% more yarn per bobbin.

(3) Less vibration.

(4) Better wound package.

(5) Increase in production and quality.

The speed increase is due to top drives finding center of rotation. Less eccentricity permits more uniform tension and subsequent quality improvement while allowing higher front roll speeds at less over-all cost.

Improvements in ballooning and wind resistance tend to pack the yarn tighter, giving more yardage at lower cost per pound. This permits an effective reduction in bobbin requirements per loom with less bobbin handling throughout the mill. The improvement also justifies an assignment increase for battery fillers—an operative handling 600 quills per hour may have this figure increased to 660 quills per hour, for example.

The economies and benefits make the changeover worthy of consideration. However, a successful conversion requires realistic training of spinning room personnel, Mr. Etters concluded.

Blend Dacron and cotton fibers 65 to 35

Textile Quality Control Association members learn at Greensboro

Staff report

OF PARAMOUNT importance in the manufacture of yarns and fabrics from blends of "Dacron"* polyester fiber and cotton are:

1. The blend ratio that best combines the desirable properties of Dacron and cotton is 65 to 35.

2. A twist multiple of 4.00 is necessary in the yarn to produce pill-resistant fabric.

3. A good cotton finish, including heat setting, brushing, and singeing, will yield a pill-resistant, dimensionally stable, and aesthetically pleasing fabric.

These are the findings reported by *A. Descheemaeker* of E. I. du Pont de Nemours & Co., Inc., to the 120 persons who attended the first meeting of the Textile Quality Control Association since it became autonomous. "From fiber to finished fabric," Mr. Descheemaeker said, "there are few if any operations that cannot be handled attractively by cotton processors."

The meeting was held at Sedgefield Inn in Greensboro, N. C., and the excellent attendance at both business sessions indicated enthusiasm for the program, which included in addition to the talk on processing Dacron-cotton blends by Mr. Descheemaeker (extract of this is presented below), the following:

James M. Heavner of Gastonia Combed Yarn Corp. discussed a study of the causes and practical control of size variations in yarn in his plant (see T.I. for August, 1956, p. 108);

Joe L. Delany of Joanna (S. C.) Cotton Mills reported on a study of the effect of heat and ginning operations on spinning and weaving (to be published in a subsequent issue of TEXTILE INDUSTRIES);

A. C. Flint of Livingston & Haven, Inc., told how mills are improving picker lap quality with the Long pneumatic lap control system (described in T.I. for Dec. 1955, p. 187).

The spring meeting of the Association will be held at the Clemson House, Clemson, S. C., on Thursday and Friday, March 28-29, 1957.

HOW TO RUN DACRON-COTTON BLENDS. Extensive laboratory and end-use tests have shown that the properties of "Dacron" and cotton are highly complementary when the percentage of Dacron in the blend is 50 per cent or more. Actually the 65 to 35 ratio in blending Dacron and cotton is the one that best combines the desirable properties of the two fibers. Dacron provides excellent dimensional stability, press retention, wrinkle recovery, abrasion resistance, and strength. Cotton reduces static, improves the resistance to hole melting, and gives a fabric that tailors well.

The yarn counts being spun on the cotton system are listed in Table I. Yarn strengths currently attainable are enumerated in Table II. The 4.00 twist multiple in spinning may seem a bit high to the average cotton man, but it has been found to be a vital factor in producing pill-resistant fabrics.

OPENING THROUGH CARDING. Dacron staple as received is in a moderately opened condition and does not require opening on standard cotton machinery. It is available for the cotton system as $1\frac{1}{4}$-inch or $1\frac{1}{2}$-inch staple with a uniform cut length. It has a fairly regular mechanical crimp. It contains a finish, making it suitable for all processes generally without the need for adding supplementary oils.

It is usually picked on either one-process or two-process synthetic or cotton pickers equipped with Kirschner beaters. If a three-beater picker is used, it is generally desirable to use a Buckley or two blade beater in the breaker section.

Although the gap has been narrowed somewhat, the difference in physical properties of Dacron and cotton is sufficiently great to preclude optimum picking and carding as a blend. The two fibers are usually picked and carded separately and then blended in drawing.

Rayon type lickers-in are desirable, and a fancy roll is mandatory for 1.25- and 1.5-denier staple. It is not necessary on three-denier if optimum settings for Dacron are used. Continuous strippers are not desirable in most cases. Close adherence to settings and regular grinding schedules are necessary for best carding.

DRAWING. Blends of Dacron and cotton can be processed satisfactorily on both three-over-four and four-over-four drawing having either cushion top or all-metallic rolls. Generally, both breaker and finisher drawings are necessary to obtain a suitably blended sliver for the roving frame.

For fine count yarn (40s to 60s), it is helpful to draw the 100 per cent Dacron once before blending with the combed cotton. This predrawing parallelizes the fibers and reduces tension differences. Roll wraps are minimized, and stronger, more even yarns result.

ROVING. Either standard or long draft roving frames can be used. Using the correct twist multiplier — usually lower than for equivalent cotton values — is the key to successful roving operation.

SPINNING. Blends of Dacron

*Registered Du Pont trademark.

and cotton have been spun on all types of spinning frames including those equipped with conventional drafting elements. The most even yarns have been produced using drafts of 25 or less on long draft frames and 12 or less on standard draft frames.

SIZING. Two formulas for sizing, based on Elvanol 72-60 polyvinyl alcohol combined with potato starch or gum and a wax, give excellent results. The trade has obtained satisfactory results on two-can, seven-can, and nine-can slashers with a variety of fabrics of standard construction.

PREPARATION FOR DYEING. Fabrics from blends of Dacron and cotton can be prepared for dyeing and finished in much the same way as all-cotton fabrics, except that a few important steps are added to control the pilling tendencies of Dacron. Table III shows a comparison of finishing procedures for 100 per cent cotton and blended fabrics of Dacron and cotton.

Regular cotton desizing enzymes can be used to remove starch from fabrics of Dacron and cotton with good results. Desizing with diluted sulfuric acid is effective and safe at room temperatures since the cotton will not be degraded.

In scouring, most processing sizes and oils and many types of soil are easily removed by mild treatments. However, certain types of stains and greases are difficult to remove by standard procedures and more severe treatments may be necessary. Since high temperatures tend to set some stains in "Dacron" fiber, it is important to use a lukewarm prescour — 100 to 120 F — to remove a large portion of the size, dirt, oil, or grease. Very dirty goods should not be heat set prior to scouring.

Drying, of course, is very straightforward, and no comment is necessary.

It may be desirable to mercerize the cotton in the blends to increase the fabric luster and dyeability of the cotton. Normal cotton mercerizing, including the treatment with highly concentrated caustic soda, is not harmful to Dacron if the

TABLE I

Dacron and Cotton Yarn Counts

Yarn Count (c.c.)	Dacron	Cotton Staple
Up to 20/1	3.0 denier, 1 1/2"	1 1/16" to 1 1/8" Carded or Combed Upland
20/1 to 30/1	3.0 denier, 1 1/2"	1 1/8" to 1 5/32" Carded or Combed Upland
30/1 to 40/1	1.5 denier, 1 1/2"	1 1/8" to 1 5/32" Combed Upland
40/1 to 60/1	1.5 denier, 1 1/2"	1 1/4" to 1 1/2" Combed Egyptian
60/1 to 70/1	1.25 denier, 1 1/2"	1 1/4" to 1 1/2" Combed Egyptian

TABLE II

Approximate Yarn Strength
Blend of 65 Per Cent "Dacron" and 35 Per Cent Cotton

Twist Multiple — 4.00

Count	Dacron	Cotton	Lea Product Lb Break × Yarn Count
30/1	3.0 denier — 1 1/2"	Upland — 1 1/8"	1750
40/1	1.5 denier — 1 1/2"	Upland — 1 1/8"	1850
40/1	1.5 denier — 1 1/2"	Egyptian — 1 7/16"	2200
50/1	1.5 denier — 1 1/2"	Egyptian — 1 7/16"	2000
60/1	1.5 denier — 1 1/2"	Egyptian — 1 7/16"	1850
70/1	1.25 denier — 1 1/2"	Egyptian — 1 7/16"	1750

TABLE III

A Comparison of Finishing Procedures

Cotton	Dacron and Cotton: Bleach or Dye Cotton Only	Dacron and Cotton: Dye Both Fibers
Singe	Desize	Desize
Desize	Scour	Scour
Scour	Dry	Dry
Mercerize	Bristle Brush	Mercerize
Dye or Bleach	Heat-Set	Jig Bleach if needed
Frame Finish	Double Singe	Dye Both Fibers
Compressive Shrink	Mercerize	Bristle Brush
	Bleach or Dye Cotton	Heat-Set
	Frame Finish	Double Singe
	Calender	Scour
	Compressive Shrink	Frame Finish
		Calender
		Compressive Shrink

temperature is kept low.

Fabrics of Dacron and carded cotton should not be kier boiled because of the danger of damaging the Dacron. In using caustic to remove motes from the cotton, the Dacron is less likely to be degraded in a J-box than in a kier.

Bleaching may be accomplished with commonly used agents for cotton without harmful effects to Dacron.

DYEING. Blends of Dacron fiber with cotton can be union and cross-dyed satisfactorily by using disperse dyes on the Dacron and either vat or direct dyes on the cotton. Although somewhat expensive, this combination of dyes gives a completely washable fabric. With direct dyes, the dyer can use a one-bath technique, which is more economical. If after-treated, direct dyes have fastness properties that are adequate for many end uses. In addition, certain developed dyes have been used successfully on both fibers.

Because of the increased use of blends of Dacron and cotton in wash-and-wear garments, the Thermosol process holds great promise of providing a practical means of dyeing volume yardage at relatively low cost.

To gain a truly economic advantage through Thermosol dyeing, runs generally are restricted to substantial yardages because of the time needed to prepare and clean the equipment for each run.

The preferred method for Thermosol dyeing blends of Dacron and cotton involves padding the fabric with selected "Latyl" dyes combined with "Alkanol" WXN alkyl aryl sodium sulfonate, to aid color absorption and "Keltex" gum thickener to inhibit migration during drying. The padded fabric is then slowly dried at a temperature of approximately 235 F on cans, flue, or roller type dryers.

Next, the color is developed on the Dacron fiber in a gas-fired roller-type hot air oven capable of attaining temperatures of 390 to 410 F for periods of 60 to 90 seconds. Curing ovens similar to those used in resin application have been quite satisfactory. Contact and infrared heat-setting units may be satisfactory if contact time and temperature are sufficient to allow complete penetration. Experience here is very limited. Clip tenter frames have been found unsatisfactory, because the tenter clips shield the fabric from the heat causing marked selvages.

The cotton is then vat dyed by either the pad-jig, pad-steam or Williams unit processes. This method is preferred because the Dacron and cotton components within the fabric can be dyed separately allowing for adjustment of shade.

In summary, the advantages that can be obtained in Thermosol dyeing of fabrics of Dacron and cotton fabrics as compared with aqueous carrier dyeing are:

1. Savings in time, labor, and chemical costs.

2. A continuous method for dyeing Dacron compatible with pad-jig develop, pad-steam, and Williams Unit systems for dyeing cotton.

3. Ability to heat-set and dye simultaneously.

4. Color costs approximately the same as for aqueous carrier dyeing.

5. No rope marks or cracks during dyeing.

FINISHING. Following the dyeing operations comes an important series of finishing operations that are designed to produce a dimensionally stable, pilling-resistant fabric with the desired hand, sheen, etc.

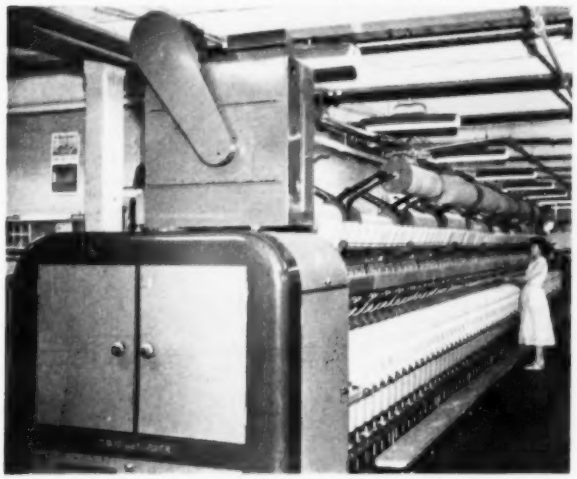
A twist multiple of 4.00 in the yarn has previously been cited as a key to pill resistance. That is part of the story. The rest lies in the brushing, heat setting, and singeing operations.

Brushing removes some loose fibers and raises others which are later removed by singeing. Heat setting, which is also necessary to obtain dimensional stability to heat, also helps to lock in the fibers through shrinkage and tightening of twist. Singeing, of course, removes the fibers raised in brushing. A thorough, evenly applied singe is probably the most important finishing operation used to reduce pilling.

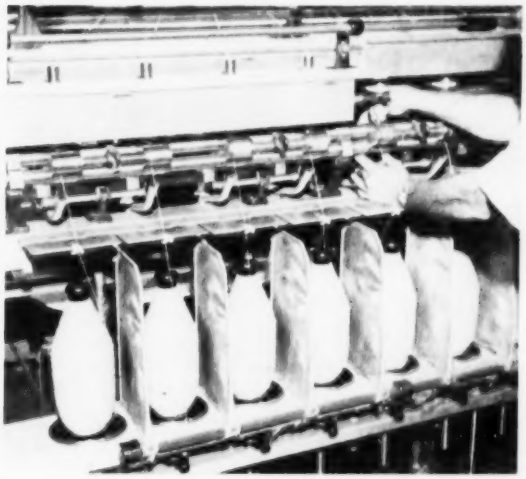
The four final operations are fairly straightforward and no detailed comment is necessary. Calendering can be used to mellow the harsh feel that may be imparted in singeing. Compressive shrinkage is necessary to make the cotton component dimensionally stable to washing.

Board of governors of the Textile Quality Control Association (left to right): Ray Gordon, Kendall Cotton Mills; Emmett W. Bringle, National Cotton Council; Kelly Waits, Joanna Cotton Mills Company; J. P. Elting, Kendall Cotton Mills; Dent Mangum, N. C. State College; Elvin Bond, U. S. Rubber Company; Ashley B. Roberts, China Grove Cotton Mills Company; George Archer, Uster Corporation; Samuel B. King, Limestone Manufacturing Company. R. C. Tanner, Fieldcrest Mills was not present for photo.

This frame is equipped with vacuum type scavengers. Note suction fan and fiber collection box mounted on head end.



Collection tubes may be seen under each delivery. Cleaning is simplified; roll speed can usually be increased.



Here are some practical maintenance suggestions

For woolen spinning overseers only!

by Louis Bussiere
Davis & Furber Machine Co.
North Andover, Mass.
*Extract**

AS A FIRST step in a regular maintenance program for ring spinning frames in the woolen mill, the delivery and draft rolls should receive attention as often as needed.

Since cleaning rolls takes time, the use of cleaners is a good preventive maintenance measure. It has been observed that cleaners are missing in many mills. If fluted rolls are run without cleaners or are not cleaned, emulsion oil and lint soon are deposited on the rolls and accumulate to the extent that they will lift the press rolls from the boss rolls. This will allow the roving to break and make uneven yarn. Periodic attention should be given to the fluted rolls. They should be taken out of the frame in order to clean the bearings of waste, and this is a good time to check on roll stands.

If twister tube nibs are found grooved and worn, they should be replaced. Proper setting should be given to twister tube nibs. Worn or grooved nibs will reduce the effective gripping power of the nippers. Regular inspection of the twister head for grooves and worn pins is also necessary. Many mills are now using a nylon treated band, giving more uniform false twist.

The same inspection should be given the traverse motion. Careful maintenance of the traverse motion will prevent the grinding of fluted rolls.

SPINDLES AND BOLSTERS. Improperly centered spindles cause additional end breakage; and, when added to the normal breaks, they often make a bad spinning job, thus increasing the operator's workload.

Bolsters are often neglected. In spite of what might seem adequate care, periodic oiling is not sufficient for cast-iron bolsters. They should be removed at least once a year, wiped off, and cleaned in a solvent such as kerosene. The bolster case should also have the old oil syphoned from it and be cleaned with a swab before the spindle is replaced in the case and new oil added.

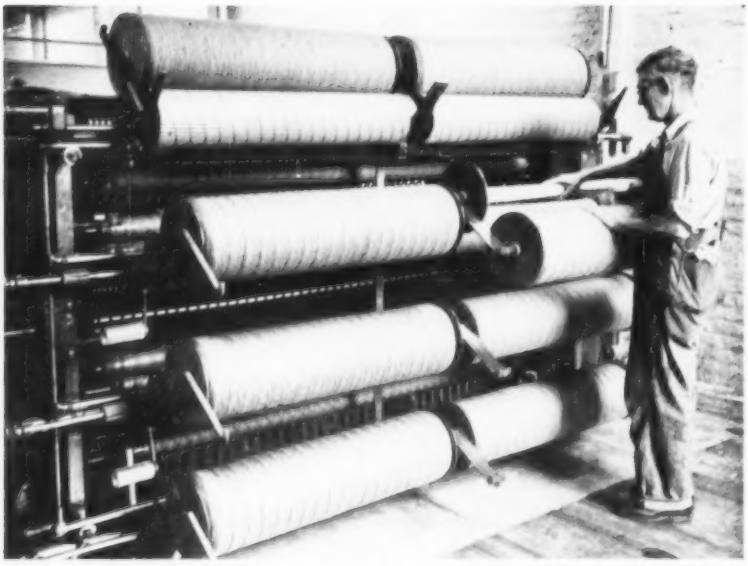
Spindles should be plumbed once a year, and any that are out of plumb should be promptly corrected. In setting spindles to the ring, it is customary to use a bobbin with a wooden plug attached. This plug should be 1/8" smaller in diameter than inside diameter of the ring, and should be evenly balanced to avoid runout. Any spindle that is found to be not in the center of the ring should be shimmed with paper placed between the bolster seat and the bolster rail. If spindles are improperly centered, bobbin sizes will vary.

Larger spinning frame packages are one sure method of cutting yarn costs, increasing production and yarn quality. Ball bearings are replacing this type spindle with oiling once a year and are interchangeable.

RINGS. Rings need a periodic rewicking and cleaning. When the rings begin to exhibit a wavy surface or start to form grooves (principal cause of this is improper lubrication), they can be sent back to

*From remarks by Mr. Bussiere at the Spinner's Guild of the National Association of Woolen & Worsted Overseers on November 9, 1956, at Hotel Manger in Boston, Mass.

Harry Heath of Manetta (S. C.) Mills points to the tapered scavenger rolls which, according to the author of this article, eliminate stripping difficulty encountered with other types, particularly when processing synthetic and wool blends.



Roving spools should be at least 12 to 15 inches in diameter. The winding of spools should be improved so that the roving will not slough off over the side of the spool head. Good roving spools will reduce waste and lessen end breakage.

the manufacturer for refinishing. An extra set of rings is needed to replace a complete frame while the rings are being rewicked or reground.

For many years ring lubrication on wool spinning frames has been achieved by means of an oil well or bottle suspended beneath the ring rail. Some spinning frames are equipped with this type of lubrication. Wicks lead from this oil reservoir to the ring, and lubrication takes place by capillary action. However, when the oil level in these reservoirs drops to any extent, there is frequently not enough capillary action to draw the oil to the ring. With this system, it is necessary to make sure that the reservoirs are kept full at all times in order to provide adequate ring lubrication.

The principle of gravity feed ring oiling is not a new one. However, a relatively new improved application works like this and can be installed on existing machines. By using a special oil reservoir located at the rear and head end above the ring rail, a constant, regulated downflow of oil is assured. This system employes a tank, pipeline, and a constant level valve. The valve is so arranged that the oil level can readily be raised or lowered in the ring reservoirs. Use of the Eadie type ring, which has the wicking on the inside, is recommended with this system. The value of the system has been confirmed by higher spindle speeds obtained in successful mill installations; also by less end breakage.

SCAVENGER ROLLS. Some spinning frames are equipped with a scavenger roll where the operator has to break or cut each lap that has accumulated on the roll. It has been noticed that operators have difficulty stripping the roving waste off the scavenger rolls, particularly when processing synthetic and wool blends.

There is a type of scavenger roll that will eliminate this difficulty. These rolls, which are open at both ends and made to taper at each end, operate in pairs and are driven by short tapes from front rolls. They may be easily stripped of waste. This patented feature enables the operator to piece up broken ends with little effort.

If the mill so desires, the Pneumafil device may be applied to the frames instead of scavenger rolls.

TAPE SHEAVES and spindle tape. In some mills standard tape sheaves are being replaced with a newly designed tape sheave. Some are prelubricated and will run for years without attention.

The spindle tape will accumulate a layer of lint at times. If this occurs, the band should be cleaned off or replaced with a new one. The fly and lint can build up until it equals the thickness of the tape. This condition will cause spindle slippage, reduction of yarn per bobbin, and twist variation.

When replacing broken tapes, it is also important to be certain that the tapes are all cut to the same length. Very small differences in lengths of tapes will cause variation in the twist and often times contribute to lighter doffs when the operator might change the pick on the builders because of a few larger bobbins.

WOODEN BOBBINS. Consideration should be given to wooden bobbins. Loose or missing ferrule in top and bottom of the bobbin will make bobbin vibration. This condition results in large and small bobbins, slack twist, and many times will decrease the efficiency of the frame.

Some bobbins with chipped heads have been observed in use in the mills. This condition will cause difficulty in spooling and

winding and also injury to the spinner's hands.

HEAD END. In order to prevent excessive wear and stretching, chains should be removed at the annual overhaul and flushed in a solvent to clean the dirt accumulated between and on the links, as it interferes with lubrication of the chain and shortens its life. Oil wells and the one-shot system that oils these chains should be in good working condition at all times. Worn or stretched chain can cause spindle rails to jump and float.

Great care should be given to the amount of grease applied to head end bearings. In some mills a large amount of grease has been observed on bearing housings and a large amount on the floor. This method is wasteful and inefficient.

IT MAY seem unnecessary to stress these points; but unfortunately, they are overlooked in many mills. A good maintenance program is needed so that the routine of cleaning and inspection can take place according to a definite schedule. By so doing the frames are kept in sound operating condition at all times; production and quality are in accordance with the manufacturer's specifications and a source of pride to the overseer of the spinning department.

Tips for dyeing and finishing fabrics of Taslan yarn

■ NO NEW or involved procedures are required for dyeing and finishing fabrics of "Taslan"* textured nylon yarn, the Textile Fibers Department of E. I. du Pont de Nemours & Co., Inc., reports in its Bulletin N-74 which was issued recently. The same methods and classes of dyes that are used on filament or spun nylon fabrics are applicable to fabrics of textured nylon yarns.

Following are some general processing suggestions offered by the company. For complete details, such as a solvent type scour for fabrics containing wax, nylon scouring formulas, bleaching methods, etc., refer to the bulletin.

Since fabrics of textured nylon can be handled on various types of equipment, the choice depends on the results desired. A loftier hand is obtained if the fabric is processed relaxed, as in a beck. Relaxing and working the fabric causes the loops in the yarn to come to the fabric surface. The more loops on the surface, softer and bulkier is the fabric hand. In beck dyeing, rope marks are not as likely to form on fabrics of Taslan yarns as on similarly constructed filament fabrics.

If a smooth, or broadcloth type of fabric is desired, handling under tension, as on a jig, is suggested. Handling under tension does not remove fabric bulk but does result in a minimum amount of surface texture.

Procedures of scouring fabrics of Taslan textured nylon are determined by the nature of the fabric, amount and kind of size present, and the kind of hand desired.

Fabrics of Taslan textured nylon require heat-setting to obtain dimensional stability and to improve wrinkle resistance. The fabrics can be set by standard means.

Generally, the fabric is set satisfactorily by boiling in water for two hours in an enclosed jig or by passing it through enclosed heat-setting units where the fabric is heated to 400 to 450 F for 5 to 30 seconds.

It is important that all oils and especially waxes be removed before heat-setting. They can cause excessive yellowing which is difficult and sometimes impossible to remove by wet processing.

If the fabric requires bleaching, normal nylon bleaching techniques and formulations can be used.

In some cases the yarn loops on the surface of fabrics of textured yarns have a tendency to cling to themselves and to rough surfaces. This tendency can be reduced considerably in certain broad woven fabrics if they are lightly sanded to break the few longer catching loops and then finished with a good softening and lubricating agent.

The best results (reduction of clinging tendencies without a sueded or napped hand) have been obtained with gap contact type sanding machines. These machines use about a 240 grit paper and have a speed of about 1,000 rpm. The fabric speed is from 10 to 12 yards per minute.

The fabric should be scoured and heat-set before sanding or any other mechanical treatment used for breaking loops and dyed afterwards.

The fabric should be free from wrinkles or creases as it runs through the sander; otherwise, streaks will be visible after dyeing.

Fabric characteristics and end-use requirements will determine the equipment and procedures that can be used to dye the fabric. The chemical affinity of the nylon is not changed by texturing. Therefore, textured yarn fabrics can be dyed with the regular classes of dyes normally used for nylon. The fastness properties of the dyes can be expected to be the same as on regular filament yarn fabrics. Disperse dyes are suggested for light shades and where maximum fastness to light and washing is not required. Selected acid dyes are recommended where good fastness is desired.

The softeners, lubricants, and antistatic agents that are normally used on nylon can be applied by conventional pad or exhaustion methods.

*The registered Du Pont trademark for a bulk yarn which may be described as a continuous multi-filament yarn in which every filament is formed into small, randomly-spaced loops, several times per inch of length. The process of manufacture, which is strictly a mechanical treatment of yarns, was developed by Du Pont Co. personnel.

Oliver Smyth of Pepperell (Ala.) Mfg. Co.; George Harris of Fairfax (Ala.) Mill, West Point Mfg. Co.; Cleveland L. Adams of Alabama Polytechnic Institute; Calvin Warren of Russell Mfg. Co., Alexander City, Ala.; and Dwight Epperson of West Boylston Mfg. Co. of Ala., Montgomery, who led the carding and maintenance discussions.

Carding, spinning, maintenance forum

in Alabama included use of umbrella creels in spinning, large packages in card room

Staff report

MORE THAN 300 men attended the annual fall meeting of the Alabama Textile Operating Executives held in Auburn, Ala., on October 27. The meeting, held in Thach Auditorium on the campus of the Alabama Polytechnic Institute, permitted mill men representing more than 1,000,000 spindles to air their mutual problems in carding, spinning, and maintenance.

Interest of the Alabama Textile Education Foundation in the activities of the operating executives was demonstrated by the presence of the following officers and directors of the Foundation on this occasion: *M. Earl Heard*, West Point Mfg. Co.; *Holmes Floyd*, Opelika Mfg. Corp.; *R. C. Moyer*, The Linen Thread Co.; *Dwight Wilhelm*, Alabama Cotton Manufacturers Association; *D. H. Morris III*, Geneva Cotton Mills; and *Homer Carter*, Pepperell Mfg. Co.

General Chairman *Oliver Smyth*, assistant general manager, Pepperell (Ala.) Mfg. Co., opened the meeting. *Dwight Epperson*, superintendent, West Boylston Mfg. Co., Montgomery, Ala., conducted the discussion on carding and maintenance problems; *Woodrow Dunn*, superintendent Huntsville (Ala.) Mfg. Co., conducted the discussion on spinning problems.

UMBRELLA CREELS, Suction Cleaning, and Large-Package Roving. Operating executives from Alabama mills in which spinning frames have been equipped with umbrella-type creels and suction type cleaning were asked to relate in detail their experience with them; also with large-package roving. Specific questions posed were: (1) What has been the per cent cost reduction attributable to each of these? (2) Where all of these have been done, what is the total effect on spinning costs on a percentage basis, or cost per pound basis?

For a few weeks *Mill A* had been running 12 frames with umbrella-type creels on Gwaltney spinning and found that overhead cleaners are necessary with that type of creel. There are no top and bottom creels to wipe, and roving is not stretched.

Large-package roving made it possible to increase the spinners' job assignments from 9 to 12 sides (216-spindle frames with 3″ rings). The larger sizes of roving and yarn packages have produced additional savings by increasing the roving haulers' assignment and in lowering the winding costs.

Mill D: "We do have large-package roving and were able to increase job loads about 10% in going from 10″ x 5″, 1.75 lb per bobbin to 12″ x 6½″, 3.10 lb per bobbin."

Mill F: "We have not had any experience with umbrella-type creels or suction cleaning. We have had very limited experience with large-package roving and find it more difficult to handle and creel because of the closeness of the roving in the creel."

Mill G: "We are in the process of installing this equipment and have not completed enough [of it] to tell the whole story of what can be done. We like the new creels, and have already been able to show some saving as we have gone along. We also believe that the return on the creel and cleaning system will justify the cost in a reasonable length of time."

Having recently installed suction cleaning and umbrella-type creels on all its warp spinning

Lester D. Sayers of Micolas Cotton Mills, Opp, Ala.; J. A. Quenelle of Avondale Mills, Sycamore, Ala.; W. T. Curry of Dwight Div., Cone Mills Corp., Alabama City, Ala.; R. L. Alford of Alabama Mills, Div., Dan River Mills, Birmingham, Ala.; and W. E. Dunn of Huntsville (Ala.) Mfg. Co., who conducted that portion of the forum which dealt with carding.

frames, *Mill H* is now in the process of changing its drafting systems, and in changing its roving packages from an 8″ x 3½″ size to a 12″ x 6½″ size.

The plant has not realized all the gain it expects, but anticipates cutting the spinner's cost about 30% from the adoption of the suction cleaning and the umbrella creel.

A further reduction in spinning costs amounting to 11½% is expected whenever the change to the larger roving package is completed. Nine fewer roving men are now needed to keep the 180 frames operating three shifts.

Creeling time from boxes is about the same as it was when the supply was kept on the creel. The boxes do, however, slow the spinners down some in their patrolling.

The installation of the umbrella creels, suction cleaning, and large-package roving simultaneously, prevents *Mill I* from reporting on the savings brought on by each of the systems. However, the installation of stop motions on the roving frames at the time the large packages were introduced dropped the roving tenders' cost per pound 43%.

The installations permitted the change from a 10″ x 5″ package containing 1.75 H.R, to a 12″ x 6½″ package containing 0.90 H.R. The creels and the suction cleaning effected a 23% decrease in spinners' costs on warp yarns.

Mill M has had no experience with umbrella-type creels but has replaced the middle creel boards with step brackets which permit the frame cleaners to do a better job, and at the same time allow use of both 10″ x 5″ and 12″ x 6″ roving in the creels. The boards were removed at the time the suction cleaning was installed.

A TREATING AGENT for cotton fiber, UNO C-7, was discussed from the standpoint of the amount used and the bearing it had on: (1) yarn strength, (2) static on cards, (3) dust in the card room, (4) amount of waste, (5) ends-down in spinning, (6) equipment rust, and (7) production.

From approximately 10,000 lb of stock treated with the product (2%) *Mill H* found that:

1. The break factor on 21s yarn dropped from 2055 to 1930—regular stock checked at the same time the fiber treatment was used served as a control.
2. There seemed to be less static.
3. There was less dust on all the machinery involved.
4. No difference was noted in the amount of waste.
5. The ends-down in the spinning room showed the treated stock running slightly better than the untreated stock—39.5 ends per thousand spindle hours compared to 43.0 ends per thousand spindle hours on untreated.
6. No machinery rust resulted.

The same plant reported the following results from using UNO XI Concentrate (2%):

1. The break factor dropped from 2092 to 2023—21s yarn.
2. There was less static.
3. There was less dust.
4. No change in waste was noted.
5. Ends-down on treated stock—45.7; untreated stock—39.0.
6. No machinery rust resulted.

A concentration of 0.1% mineral oil is applied at the blending feeders of *Mill K*. There is a reduction in fly in the card room, but an increase in fly in the spinning room. An increase in humidity causes the cards to load.

Mill S added a commercial preparation to a solution used to tint their low grade cottons, and holds the opinion that there was less dust, less fly, fewer neps, and less waste as a result. The test run consisted of 2000 lb of stock.

CARD COILER CONVERSION to permit use of 18″ x 36″ or 18″ x 42″ cans instead of the small 12″ x 36″ sliver cans was another topic the mill men discussed. They were asked to report specifically the results expected and the results obtained, how the installation of larger cans affected the labor force on cards and drawing, what per cent reduction in cost per pound was obtained, and if mechanical difficulties were experienced.

Mill E reported an anticipated saving of one man per snift on 201 cards once the installation is complete, but anticipates no saving at the drawing. There have been no mechanical difficulties experienced.

Mill F has changed from 12″ x 36″ cans to 14″ x 36″ cans and has

These 29 men, all embryo loom fixers, came as a group from the Sylacauga, Ala., plants of Avondale Mills.

increased the running time between doffs 15%. Since the changeover is still in process, there is no experience to report on labor savings, mechanical difficulties, etc.

Mill N converted to 18" x 42" cans, expecting to get from 36 lb to 40 lb of stock in a can, but so far has been able to put in only 26 lb. However, the doffing time increased from 40 minutes to 2 hours.

The drawing was changed at the same time the carding was converted, so the current problem is that of reaching the anticipated goal at the two processes. No reduction in labor has occurred, and no mechanical difficulties were reported.

SLUBBER STOP MOTIONS as they are related to quality, production, job loads, waste, and maintenance were discussed by the representatives of five plants.

Mills C and D report that job loads remain approximately the same, there is slightly less waste produced, and quality has improved from the absence of "snow storms" or multiple end breakage. Maintenance at *Mill C* is practically the same as was experienced without the motion; at *Mill D* additional demands on the mechanical department have been necessary.

In the process of installing stop motions, *Mill F* has not reached the point where a change in work loads can be considered. This plant has experienced considerable decrease in front waste, little maintenance required (a few drop wires occasionally), improved quality from the reduction in doublings, etc., and an increase in production brought on by the shorter starting time needed after an end-break.

The installation of stop motions at *Mill I* took place after an increase in work assignment had been effected. Present studies show no further increase possible. Roving waste is down; roving quality is up. There has been a decrease in production, but the plant feels that this will be overcome with operative training. A daily check is made for bent drop wires, wires not working properly, etc., and through this method of checking closely the maintenance figure is kept quite low.

Stop motions on 10" x 5" slubbers producing 1.50 H.R. enabled *Mill M* to increase frame assignments from 4 to 5. Quality has improved, but production has not increased. In the three years the motions have been in use there have been no maintenance problems. There has been no noticeable reduction in waste.

EQUIPMENT MAINTENANCE was discussed, and it appears that the plants follow a general pattern in assigning repair orders to shop personnel and in keeping repair cost records. However, no two follow the same pattern closely.

In general, the repair orders originate in the various departments, and are sent to the mechanical department where they are appraised by a foreman or by the master mechanic. Usually the order is marked with the date of its arrival.

The person (or persons) selected to execute the orders is briefed on it by the person making the assignment. Materials and manhours usually are recorded by the person doing the work, so that the department receiving the benefit of the shop's services will be properly charged for them.

The system used at *Mill H* is given below:

"In assigning repair orders to personnel we use two methods:

"Method number one covers the assignment of regular or ordinary repairs. We pass orders for machine repairs, electrical trouble, and some building repairs to the shop foreman. He then assigns these orders to the person most suited for the repair job.

"Method number two covers major jobs and extraordinary jobs. They are handled from the master mechanic's office, using any available help that may be talented for these various jobs.

"To keep cost records we have the assignment of each man on his time card as to whether he is a welder, electrician, painter, carpenter, mechanic, etc. At the end of each week the time cards go to the main office. There they are charged to service account numbers and are prorated to various departments. This applies to regular and ordinaries only.

"On all extraordinary [repairs] we assign work job numbers. These work job numbers are letter numbers like A—B—C—D—, etc., and are kept complete in the shop. On all capital jobs we use numbers like 1—2—3—, etc., and these are all capitalized."

MARCH OF DIMES

FIGHT INFANTILE PARALYSIS

JANUARY 2-31

What are YOU doing about accidents?

Read this accident-prevention conference report—you may get some useful ideas

Staff report

MORE THAN a thousand safety-minded industrialists met in Columbia, S. C., November 8-9, to attend the 19th Annual Accident - Prevention Conference sponsored by the South Carolina Industrial Commission.

Many representatives of the textile industry were present and participated in the program.

Newton G. Hardie, plant manager, Chicopee Mfg. Co., Walhalla, S. C., presided over the textile session and served on the planning committee. Also on the planning committee were *Noel E. Williams,* public relations manager of U. S. Rubber Co., and *James P. Sloan,* Joanna (S. C.) Mills.

HUMAN ASPECTS of Safety. "Our high accident rate today is evidence that our progress in human relations is far behind our technological progress," Chauncey W. Lever, director of public relations for Abney Mills and Erwin Mills, told the delegates.

Mr. Lever

"We have the technical 'know - how' to cut accidents to the vanishing point if we, as an entire population, would decide to do so," he said. "The majority of you could reduce accidents to almost zero if you could get 100 per cent cooperation in your recommendations, and 100 per cent observance of your regulations! You know what to do, but the big problem is how to get the necessary cooperation. And that is where the human element comes in."

Mr. Lever continued, "We must think of the accident problem as a whole — as a situation concerning all of us. It can be dealt with effectively only through collective action. Too often we have thought of safety in terms of our own special field of interest. Accidents occurring outside our territory have been considered the responsibilities of others. We have overlooked the fact that all of us are constantly exposed to the potential carelessness of others, and that the overall accident problem directly concerns each of us."

"Yes, safety is a matter of public concern. . . . We must stir human hearts with the idea of safety from the cradle up. . . . We must go beyond dollar values to reach the motivations of most workers. Figures are too vast and impersonal. . . .

"The moral imperative of safety must be discovered before we can get very far with the cause of safety. Safety must be translated into a dynamic, positive expression of the moral aspirations of man.

"As he embodies an expression of life, the individual is important. Accidents are incidents of the process of death. When we commit ourselves to the cause of safety, we identify ourselves with belief in life — and in the importance of individual life. . . .

"Go back to your jobs with conviction that your prime consideration is the prevention of human suffering and loss of life. The savings in dollars and cents will follow as a natural by-product."

Concerning human values and accident prevention, Mr. Lever read to the group several of the comments which he received from safety officials over the state who responded to a mail survey which he conducted. Among them were the following:

James M. Fuller, safety director for Woodside Mills: Safety is a warm, human thing which cannot be ordered by the purchasing agent or run through the plant like a production order. It is rather a fundamental attitude of mind — a philosophy of good management which deliberately places the physical welfare of human beings first.

One of the most dramatic examples that comes to mind is something that happened to a lad of 18 years, on a Thursday about an hour before the end of his shift, with one more day to work before entering college (on a football scholarship).

While he was operating a waste machine, it became choked. The lad shut off the power; then by use of a wrench he removed the two bolts allowing the conveyor to drop down. The conveyor then stopped, giving the appearance that the beaters had likewise stopped (these beaters continue to turn for about fifteen minutes after the power is shut off). The lad then reached his right hand into the machine to remove the choke, he put his right hand into the beaters — still revolving. The result after almost a year of medical care, thirteen skin grafts and surgery, left what remains of a thumb and little finger.

This injury made the "circles" fast. The lad did however, make an exceptional recovery and comeback also. He played basketball in the Southern Basketball Tournament the following season. This demonstrates that even in the face of such odds, with proper interest in each individual the result can be improved.

Carl W. Littlejohn, Jr., director of employee insurance and safety for Erwin Mills: Several years ago an employee in his early thirties with a wife and three young children scratched his hand. This employee did not obtain first-aid treatment, and blood poisoning set in. As a result of blood poisoning,

this employee died. The widow and children received $8,000.00 from Workman's Compensation and $1,000.00 for group life insurance. This was a total of $9,000.00 to support and educate these small children. At the time of the accident, the employee had an earning capacity of over $3,000.00 yearly. Therefore, from a small scratch we lose a husband and father who would have earned at least $3,000.00 annually for the next thirty years for the support and education of his children, leaving them with only $9,000.00.

On May 23, 1956, a forty-three year old employee who had been with the company only three months caught his right hand in a sanforizer. This caused the loss of the ring finger and a partial loss of the middle finger. There have been three operations on this hand with two more to be performed in the future with considerable skin grafting. These future operations will be an attempt to reconstruct this hand to give the employee some use. The employee has been off the job since the accident, will be off for several more months. In all, this employee will lose over a year's time from work and will never be able to perform the same job. He will have almost complete loss of his hand.

ACTUAL DOLLAR COST of Accidents. An average compensable accident that cost $100 in 1945 cost $248 in 1954 — a 240 per cent increase; the average reported medical case that cost $100 in 1945 cost $232 in 1954. This is what has been happening in the field of Workmen's Compensation, *R. E. Welsch*, assistant insurance manager of J. P. Stevens & Co., Inc., told the conferees while talking about the actual dollar cost of accidents.

Mr. Welsch

The factors that have been responsible for this steady climb in cost, he said, are: the increase in benefit levels as a result of amendments to the laws; the increase in medical costs; high wage levels; and a continuing liberalization in the interpretation of the laws.

Mr. Welsch pointed out that during this same period Workmen's Compensation Insurance Rates have been reduced 20 per cent. The greatest factor in achieving this result, he said, was the industrial accident prevention work carried out by employers with the help of their compensation insurers.

Informing those present that out of every premium dollar, roughly sixty cents is set aside for losses, the remaining forty cents for insurance company expenses, taxes, and underwriting profit, Mr. Welsch stated that it is in the loss segment where safety engineers have and must continue to whittle away. "Your insurance premium will directly reflect the effectiveness of the job you do," he said.

While the insurance premium reduction may be substantial, the savings are small when contrasted with other savings and profit producing factors which result from good and effective accident control, according to Mr. Welsch. Four named were:

(1) Lower indirect cost which may vary from one to fifteen times the actual medical and compensation costs paid — i.e., machine damage, downtime of machines, spoilage, etc.

(2) Increased productivity of labor and equipment;

(3) Improved relationship between the operative and the supervisor, between the supervisor and management; and higher employee morale;

(4) Preservation of life and prevention of suffering.

ON FRIDAY, November 9, six Abney Mills plants received certificates for outstanding safety performance from October, 1955 to September, 1956.

Move to provide more and better textile school graduates

■ MEMBERS of the South Carolina Textile Manufacturers' Association and officials of Clemson College have initiated an educational program designed to provide more college trained personnel for the textile industry, according to an announcement.

Association President *Howard B. Carlisle* of Lyman Printing and Finishing Co., appointed the following executives to represent the textile industry on an advisory committee to work with the board of trustees and college officials:

George P. McClenaghan, of J. P. Stevens & Co., Inc., is chairman; other members are *J. J. Lyons* of M. Lowenstein & Sons, Inc.; *A. B. Sibley* of Deering, Milliken & Co., Inc.; *S. H. Swint* of Graniteville Co.; *J. C. Self* of Greenwood Mills; *P. S. Bailey* of Clinton-Lydia Mills; and *F. E. Grier*, of Abney Mills. Mr. Carlisle is an ex-officio member.

This committee will concentrate on four major immediate tasks:

1. Development of a plan for enlisting the full interest and support of the state's textile industry in selling its career opportunities to the people and to encourage the enrollment of large numbers of outstanding men in the school.

2. Development of a plan to provide funds for more academic scholarships in the school.

3. Development of a program of summer employment for all students of the school.

4. More clearly define the expectations of the industry regarding the type of training desired in a textile graduate.

Textile Operating Executives of Georgia discuss

Moisture control in slashing

Staff report

The weaving and maintenance discussions during the fall meeting of Textile Operating Executives of Georgia were reported in the December, 1956, issue of this magazine on p. 124.—The Editors.

MOISTURE CONTROL at the slasher is effected in 14 out of 15 cases through the use of some mechanical or electronic device. The mill representing the lone exception uses laboratory facilities to get a moisture check from each slasher on a weekly basis.

The question of control accuracy was broached by a mill representative who wished to know if others were able to remove a sample from the slasher and transport it to the lab without a weight change taking place in the sample.

No one offered a solution, but it was pointed out by the discussion leader that the consistency of the checks is more important than is the accuracy of the laboratory findings vs the control reading at the time the sample is taken.

Several mills report that the experience of the slasher operatives in "feeling" the moisture in the warps as the slasher runs is a valuable aid in double-checking the control readings.

The slashing data submitted by the various mills are listed in Table I.

Mill D retains 6% moisture in warps of heavy sley (above 100), and leaves 7.5% in those warps of lighter sley.

The moisture control unit used by *Mill H* indicates continuously whether the yarn coming off is "wet," "normal," or "dry," and is calibrated to indicate in the "normal" band when the moisture content is 7.5% plus or minus 0.6%. This plant feels that the control instrument represents some saving in steam, and points out that the instrument is sensitive enough to indicate wet spots or uneven size application brought on by a bad blanket.

Two slashers at *Mill M* operate under electronic moisture controls. One is a four-cylinder unit; the other is a type which dries with

TABLE I
Slashing Data

Mill	Warps: Yarn Size	Warps: Number of Ends	Number Slasher Cans	Moisture Content (%)	Allowable Moisture Variation (%)	Slashing Speed (ypm)
A	30 12 9.5 8	6300 2900 2450 2260	3 & 9	7.5	± 1	—
B	18 30 40/ 60/2	Carded " " Combed	9	7	± 0.25	75-115
C	7.9 & 1216	2000 to 3000	3 & Cylinder- air	7-8	—	—
D	22.5 (avg.)	1950 to 6910	3	7-cotton 10-spun rayon	—	—
E	28	3722	3	6.5-7	—	80
F	2.6 30.75	1380 5696	2			
H	26 31	3208 & 4812 720 to 3146	2	7.5	± 0.6	—
I	4.5 to 17.5	— —	3	8	—	—
J	4.5	1950	3	8	—	18
K-1	9 to 34	1950 to 10,560	No. of cans not given also uses hot air	7	—	—
M	20 14.5	4350 5800	2, 4, & hot air	6-7	—	—
N	12 to 17	2000 to 6000	3	7.5	—	—
R	14 9.25	696 1824	2	8 7	—	—
S	23	2642	3	7	—	—

hot air. These slashers process warps for flat goods with 11% to 12% pickup—the warps vary from 4350 ends of 20s yarn to 5800 ends of 14.5s yarn.

Eight slashers are equipped with cylinder temperature controls and are operated under a prearranged schedule of speeds and temperatures. In addition to the flat goods mentioned above, these slashers process terry top goods with a pickup of 3.5%.

Daily laboratory tests are made to confirm the actual moisture content which is kept around 6.5% to 7% for all warps.

Used in warps containing from 532 to 2936 ends are 8s, 19s, 12s, 14.5s, 16s, 19s, 20s, 19s/2, and 16s/2 yarns.

While running two slashers with double fronts, *Mill R* obtains good results with a moisture control instrument on the bottom warp only.

"We slash from 696 ends [of] 14/1 yarn to 1824 ends [of] 9.25/1 yarn at the same time, always trying to put the heaviest yarn and [the greatest] number of ends on [the] bottom for controls. We try to hold 7% moisture on 9.25/1 yarn and 8% on 14/1 and 12/1 yarn."

Mill S has two mechanical type moisture controls and two electronic types. " . . . From experience to date, we know the approximate speeds our various styles will run and still maintain the 7% moisture indicated by the graph. It is the slasher tender's responsibility to check the warps being run to determine whether the slasher is being run too fast or [too] slow to maintain the desired 7% moisture content. In other words, even though we operate by the use of the instruments, we check enough to be sure they are operating satisfactorily."

This plant describes a typical run as being composed of 2642 ends of 23s yarn run on a conventional three-cylinder slasher using ten pounds of steam.

Griffin size boxes give *Mill D* an increase of 0.89% in weaving efficiency over the same styles run on conventional size boxes. Slashing production is about the same. A slight improvement was reported "because of fewer broken ends, fewer laps on rolls. . . . " The plant has been unable to set for a predetermined pickup.

Using a Griffin size box on hot air slashers, *Mill K-1* reports very good results attained. There is less rolling of yarn in the box and less trouble from streaks of hard size when the slasher is stopped. The pickup is controlled by varying the pressure on the pneumatically loaded dresser roll.

Mill S has had a Griffin box only a short while but likes the behavior of the box to date, and believes that the unit will permit closer pickup control than conventional equipment.

The union drive on the South

by Thurman Sensing*

■ IT IS NOT a new story — it is just a revived story—that the unions are planning a big organizing drive on the South, particularly in the textile and tobacco manufacturing industries.

The South has always been a very frustrating region of the country, so far as the national labor unions are concerned—just as it has always been a frustrating region to a great many other movements that would deprive the individual of the right to make his own decisions, decide his own future, and choose his own destiny.

In other words, the South, as a region, believes in individual freedom. It believes in local self-government rather than in centralized government. It believes in individual initiative rather than a planned economy. It believes in individual incentive and opportunity rather than in government doles and controls.

The unionization of the workers of the South is just one part of this general effort on the part of those who would gain power for themselves by destroying the freedom of others. Not that voluntary unionism in itself is so bad—though it does deprive the worker of the right to act in his own behalf—but that the abuse of unionism is so bad!

The union leaders are not satisfied to organize a union composed of voluntary members who are perfectly willing to pay the membership dues in return for having the union bosses represent them in negotiations with the employers. And who are also perfectly willing, it might be mentioned, to have part of their dues used to support political candidates of the union bosses' selection, without having any voice in the selection.

Instead of this, the union leaders are constantly striving to make unionism compulsory. They want complete control over all the workers. They want to repeal the right-to-work laws in the states that have them—and the majority of these states are in the South. They want the closed shop, or if they cannot get that, they want to go through the back door and get the union shop, which is in effect the same thing.

They do not want any worker to have the right to get a job and make a living for himself and his family without being forced to pay dues for the privilege of doing so. They want to force the union member to help support the political candidate of their choice without the member himself having any voice in saying who that candidate shall be. In other words, they want complete control over the lives of their members.

These are things to which the people of the South object and to which they will not submit—be they workers in the factory or otherwise. It is simply not in accord with the philosophy of the southern people to accept compulsion in any form.

But it is for this very reason that the proponents of centralized government and economic planning make the South their chief target. They know that as long as

*From *The Jonuna Way*, September 1956.

the South holds out, they cannot force their ideology on the country as a whole. This is also the reason why the national unions are so anxious to get the workers of the South under their control. They know that so long as the rest of the country sees the workers in the South prospering and the South as a region prospering, it will be generally realized that unionism is not all they claim it to be.

Advice for makers of man-made fiber fabrics

■ "WE IN THE textile industry are faced with the gigantic task of endorsing education and rigid adherence to truth in advertising and product labeling if we want to maintain the rapid rate of growth of consumption of the man-made fibers that has prevailed in recent years," declared *J. B. Goldberg*, consultant to the textile and allied industries, during a recent International Conference on Fabric Quality and Informative Labeling held in Gothenburg, Sweden.

There are two objectives which we may strive for to benefit all concerned, according to Mr. Goldberg:

(1) Unanimous agreement on minimum performance standards is something that is going to take a long time to achieve, and the promotion and policing of which is likely to be extremely costly;

(2) General adoption of identical terminology for hang-tags which suggest methods of care for textile products.

"This one step toward standardization of wording will, in my opinion, do much to reduce the consumer's confusion," Mr. Goldberg declared.

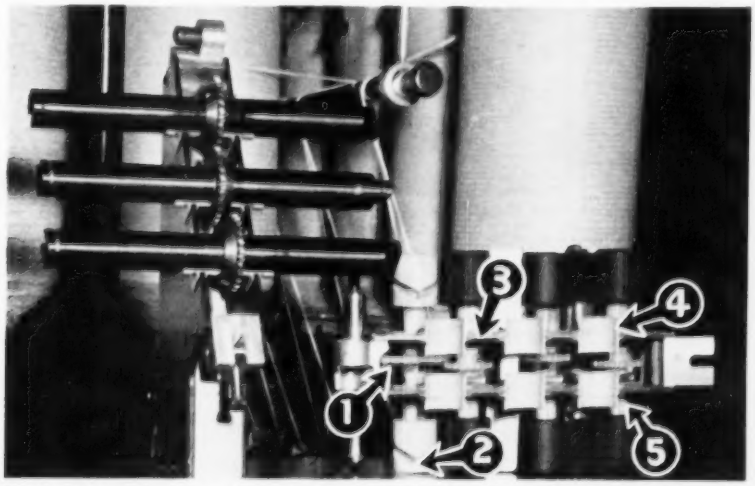
Draft conversion features unit replacement

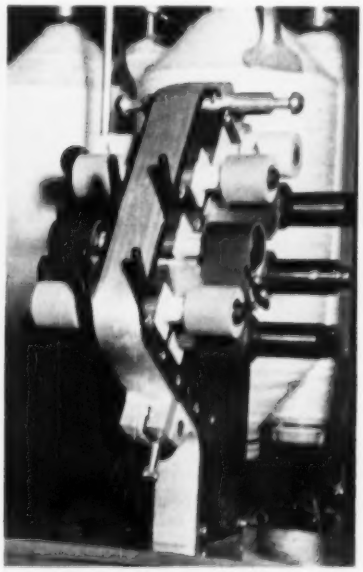
■ A SPINNING draft conversion which can be repaired, or the units replaced, without loss of more than two ends from production, is being developed by Hartford Machine Screw Co., Hartford 2, Conn. Instead of continuous bottom rolls which run the length of the frame, the system uses short lengths of driving rolls notched to permit coupling (circular spring clips secure the joint alignment). See the accompanying photos.

Each pair of ends has a set of driving rolls and a common drafting unit, all mounted on a roll stand. The three-roll, two-apron system is mounted in a frame which permits the entire drafting assembly to be lifted in a unit from the stand and the driving rolls. Gears transmit the power from the driving rolls to the drafting rolls — one gear for each set of drafting rolls.

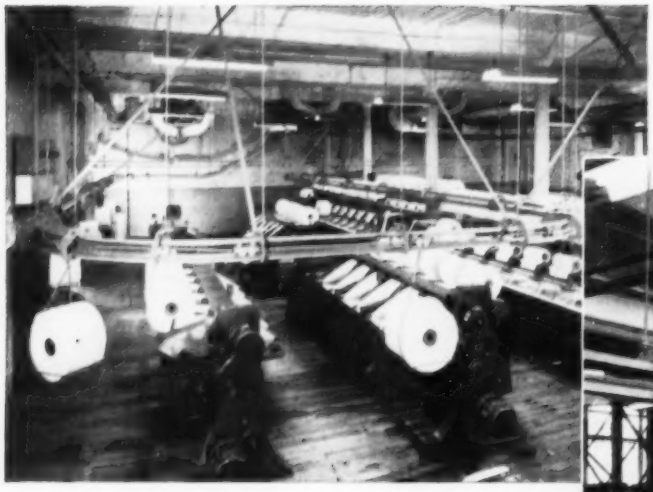
Roll pressure is supplied by endless coil springs looped around the bearings of the bottom roll and its companion top roll. All bearings are of a specially compounded nylon. There are no nebs.

Roving traverse is accomplished by a picking device which picks one tooth per revolution of the back roll. This motion is translated to grooved cams mounted behind the third drafting roll in a position corresponding to the location of the conventional trumpets. The roving rests in the cam grooves and is guided into the bite of the third roll.

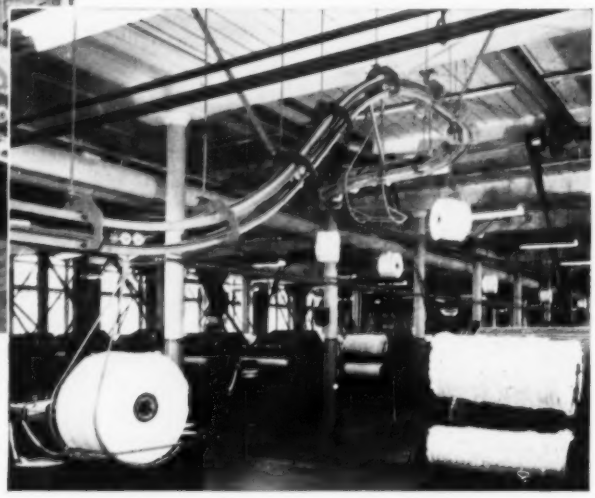




Photos of demonstration unit on display at the Southern Textile Exposition in Greenville, S. C. Arrows indicate: (1) the picking wheel for the traverse motion; (2) grooved cams for traversing the roving; (3) endless coil springs which supply the roll pressure; (4) nylon bearings for the driving rolls; and (5) nylon bearings for the drafting rolls



Sliver laps are transferred continuously between the combers and the lappers on a Landahl Chainless Conveyor.



Complicated curves are no problem with Landahl Chainless Conveyor. The light track sections are easily fabricated into short radius turns in any direction.

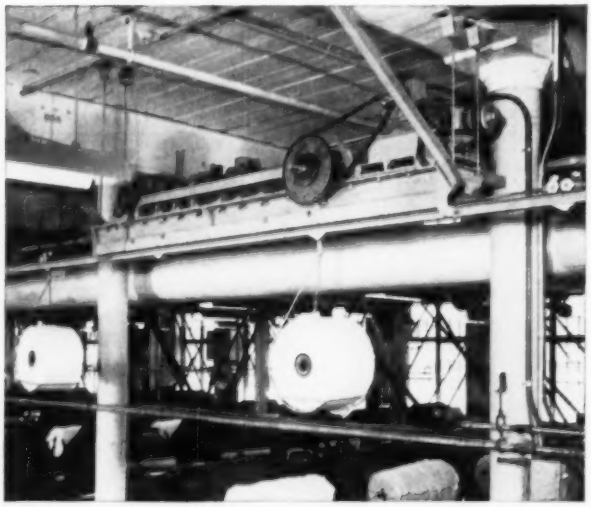
new CONVEYOR SOLVES OLD HANDLING HEADACHE

The unique patented design of the Landahl Chainless Conveyor offers many distinct advantages not found in any other conveyor.

Basically, the conveyor is a series of solid steel rods connected by ball-and-socket type universal joints housed in compact trolley units. The trolley units move freely on ball-bearing steel wheels, over tracks formed by parallel steel angles supported from above by track plates.

These design advantages make the Landahl Chainless Overhead Conveyor lower in initial cost, more flexible, simpler to install, safer to operate and easier to maintain than any other system.

Write for Bulletin G-100—showing many other advantages of Landahl Chainless Overhead Conveyors.



Caterpillar drive brings dogs in pairs mounted on endless roller chain down to engage the Landahl trolley housings for forward propulsion.

LANDAHL **Chainless** CONVEYORS

Photos courtesy F. W. Poe Mfg. Co., Greenville, S. C.

The LANDAHL CONVEYOR CO.

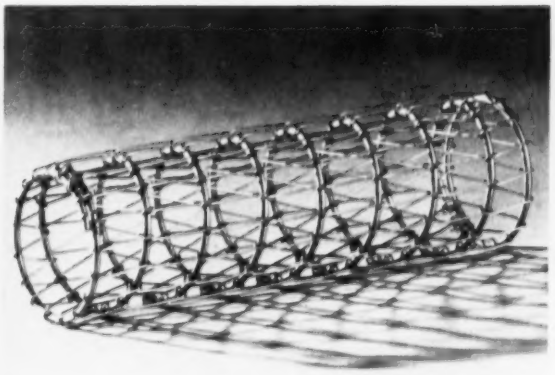
13106 Athens Ave., CLEVELAND 7, OHIO

A SUBSIDIARY OF THE AMERICAN MONORAIL COMPANY

Need to put more yarn on dye packages?

Here's the way a thread finishing plant does it

Smith-Drum package dyeing equipment at Coats & Clark's Toccoa mill. Carriers are loaded with yarns wound on Davidson springs.



Due to the open nature of this spring when it is compressed, a free flow of dye liquor or air through the yarn is permitted.

■ AT THE Toccoa (Ga.) mill of Coats & Clark, Inc., where thread produced in the company's southern plants is finished, it has been found that by winding yarns to be dyed on stainless steel springs like the one shown in an accompanying photo, 25% to 50% more yarn can be placed into the same dyeing machine.

Greater operating economies such as short liquor ratios, large dye lots, and less labor required per pound of yarn processed are the results. Another advantage realized by using the spring, which is manufactured by Davidson, MacGregor & Co., Ltd., of London, England, is that no covering or knitted sock is required over the spring and waste from backwinding is eliminated.

Over 300,000 of these Davidson dye springs are in use at the Toccoa mill, according to Parrott & Ballentine Textile Equipment Co., exclusive U.S. sales agents.

Magnetic separators save them money

■ AT THE Oakdale Cotton Mills, Jamestown, N. C., four 34″ magnetic separators of the plate type have been installed completely across the passageway immediately following the kick-off apron rolls of four blending feeders handling cotton and reworked cotton waste. The magnets are picking up iron and steel particles originating in this material, as well as an occasional broken part from the feeders themselves, and are protecting all of the mill's cleaning and opening equipment. According to a mill official, the separators have proved completely effective to date; shutdowns due to machinery damage and fire caused by tramp iron have been eliminated.

At the Chicopee Manufacturing Corporation's nonwoven fabric plant at North Little Rock, Ark., an installation of two 38″ and one 43″ permanent nonelectric magnetic plate separators is in use, one each above the spiked aprons of three pickers handling absorbent cotton, rayon, nylon, and card returns. The magnets are removing wire, nails and a wide assortment of similar small ferrous objects originating in the materials, and are effectively protecting the mill's pickers, cards, and special processing equipment. According to R. E. Hall of Chicopee's Engineering Department, the magnets have already saved thousands of dollars in machinery damage, and have eliminated production delays due to such damage and to fires.

In each case the separators used are Eriez Hi-Powr nonelectric plate type.

Installation of permanent nonelectric plate magnet on picker at Chicopee Manufacturing Corp.'s North Little Rock, Ark., nonwoven fabrics plant.

FACTS about NEW DEPARTURE BALL BEARINGS

BALL BEARING SPINDLES PRODUCE CLEANER YARN-FASTER!

New Departure self-enclosed spindle bearings are grease-lubricated—operate for as long as five years without relubrication. They eliminate a common cause of oil mist—produce cleaner, better yarn.

Also highly important, these smooth-running, low-friction ball bearings permit higher speeds, give faster yarn production—longer tape life. They are mounted in oil-resistant, synthetic rubber housing rings to reduce vibration from any load unbalance.

Write for full information on New Departure ball bearings for spindles and other textile applications. Join other leading manufacturers who have proved the economy and performance advantages of New Departure ball bearings in their textile equipment. New Departure, Division of General Motors, Bristol, Connecticut.

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

SEE "WIDE WIDE WORLD" SUNDAYS—NBC-TV

Hartford Machine Screw Co. split-base spindles save on maintenance time—give quick accessibility to spindle parts.

NEW DEPARTURE
BALL BEARINGS

GM GENERAL MOTORS

NOTHING ROLLS LIKE A BALL

"Politics has become a year-round job..."

■ TO ASSUME from the results of the recent presidential election that the unions are politically ineffective would be a major error, the National Association of Manufacturers reminded industry executives recently.

"If those who fear the objectives of union political ambitions now relax in the fallacious belief the union bubble has burst," the writer continued, "they are likely to have a rude awakening sometime in the not too distant future.

"The pre-occupation with politics of most of the top union leaders is ineradicable. The political machine they have constructed is here to stay. It will be more widespread and more effective in 1958 than it was in 1956. In 1960, when Eisenhower will not be on the ballot to command the confidence of union members, it may be more effective still.

"Politics has become a year-round job in this country, every day of every year. The only way truly representative government can be preserved is for every citizen, and particularly those groups and organizations who are in a position to lead in our communities, to be interested and active in politics between elections as well as at campaign time."

Mill licks condensation in new weave room

■ OPERATING efficiency in a cotton weave room is usually at optimum if the temperature can be maintained between 80 and 85 F, with the relative humidity maintained at a predetermined percentage ranging between 80 and 85. Under these conditions breakage of the warp and filling yarns is held to a minimum and static electricity is practically eliminated.

Clinton Cotton Mills' 1300 looms in its new weave room at Clinton, S. C., have a rated capacity of 165 and 185 picks per minute. Proper control of humidity and temperature aid in holding loom stops to a minimum. The quality of the fabric and the mechanical operation of the looms are also benefited.

One problem that arises from the maintenance of this high humidity is the possibility of damaging condensation on the walls and ceilings of the weave room. To overcome this, the new weave room, a one-story addition to the company's original thick-walled multistory plant, is constructed with walls consisting of a two-inch layer of cellular glass insulation installed between the outside face brick and a glazed tile interior wall. This Foamglas insulating material is also used on the roof. Two-inch-thick blocks are laid in hot asphalt over a three-inch wood deck and are covered with a four-ply built-up roof covered with gravel.

Accurate control of temperature and relative humidity is being maintained in this new 1300-loom weave room at Clinton Cotton Mills, Clinton, S. C. Cellular glass insulating material was installed in walls and roof to prevent condensation.

J. B. Templeton, vice-president in charge of manufacturing at the Clinton Mills, says that this cellular glass insulating material provides a moisture-vapor barrier on walls and roof of the weave room. This insulation, coupled with the operation of four evaporative cooling systems which have been installed in four roof penthouses, makes it possible to tailor the plant air to optimum weave room conditions.

The four evaporative cooling units, each with a capacity of 80,000 cfm, are designed to handle a calculated heat load of 5,000,000 Btu per hour.

Throughout the weave room's 121,000 square feet of production area, the temperature shows little variance from 80 to 85 F, and relative humidity is held at an almost constant 80 per cent.

With temperature and humidity under control, the problem of condensation and its resultant damage to walls, roof supports, window frames and floors is controlled.

Insulation used was Foamglas, produced by Pittsburgh Corning Corp.

a preference based on performance

After many years of service to the Southern textile industry, Standard Oil products continue to be *first* in point of popularity. There's only one answer. To stay first your product must be *dependable*, your service *superior*. Standard Oil was first to offer special lubricants for textile machinery, and for over half a century these have been constantly improved to meet changing needs. Wherever there are moving parts—from one end of your mill to the other there are special types of Standard Oil lubricants to afford maximum protection. If you would keep your equipment running at peak efficiency and low maintenance cost, use Standard Oil lubricants.

STANDARD OIL
LUBRICANTS

The combined facilities for research, testing and engineering behind Standard Oil Lubricants are unequalled.

Standard Oil Company
(KENTUCKY)

Synthetic latices *(from page 95)*

products.

Latex treatment adds body and improves fabric durability. Binding the individual fibers in place, latex reduces raveling and improves tear and snag resistance.

These properties make backed fabric ideal for covering in the automotive and home furnishings fields. Foam cushions are now upholstered easily with latex-backed fabric.

FABRIC SIZING

In addition to being very successful with, and important to, the production of nonwoven fabrics and woven and tufted carpetings, synthetic latex is also applied to millions of yards of other types of fabrics. These include light-weight, fine knitted fabrics such as hosiery, woven mattress ticking, drapery and upholstery goods, crease-resistant dress goods, to such coarse materials as burlap, haircloth, felt, and many others. And, with the use of latex, the advantages uppermost are the permanence without expensive, complex curing often needed in other systems, and ease of handling in normal textile processing equipment.

As has already been mentioned in connection with nonwoven fabrics, the use of latex is not restricted to certain fibers or constructions. Adhesion to the more difficult treated synthetics can be developed by choice of latex and other ingredients. Control of penetration and weight of added latex solids can be readily adjusted through use of proper type and amount of thickener to control viscosity and solids content of the proper system, then a number of important properties can be imparted to a wide variety of goods.

Durability and improved body, water resistance, and solvent resistance are readily achieved. Premium properties such as flame-resistance and dimensional stability are also possible. Thus, achievement of new properties and new fabrics is a matter of imaginative design and development.

The traditional concept of sizing warp yarns, primarily cotton, has been to utilize the natural occurring water soluble materials such as gums, starches, and dextrins, which form a continuous protective sheath around the fiber. One of the primary reasons for using these materials has been the desire for a sizing that would be readily removed previous to the dyeing operation. However, since the introduction of the newer synthetic fibers such as nylon, dope dyed rayons, and so on, this concept has, of necessity, changed.

Although the newer sizing materials for these man-made fibers can still be classified as water-soluble, they are of synthetic types that have been developed by polymer chemists. The desire to utilize the advantages of dope-dyed rayon fabric, for example, had led to a great deal of development work directed toward the production of loom-finished fabrics.

This has led to the study of water-soluble high polymer products, such as synthetic latices, as sizes for such yarns. These are applied to give protection to the yarn during slashing as well as to confer a permanent finish to such fabrics. This has opened the potentialities of other fields, including such important ones as denims, industrial and military uniform fabrics, and carpet yarns.

WARP SIZING

Thus far, the bulk of the development of the warp-sizing process utilizing synthetic latices has been confined to the denim field. This was prompted by the obvious advantages that could be realized by the use of permanent-type sizing materials. Among the more important of these advantages are:

(1) Improves abrasion resistance of fabric, especially after repeated launderings.

(2) Improves resistance to crocking.

(3) Imparts permanent body and hand.

(4) Retains original appearance even after repeated launderings and extended wear.

(5) Stabilizes the fabric against excessive shrinkage.

These improvements have been borne out in many extensive plant trials on conventional production equipment. In the initial phases of this work it was not thought possible to utilize the size box for application of the latex to the warp yarns. Later experience, however, indicated that the warp sizing operation with latex could be handled very satisfactorily on conventional warp sizing equipment. This both reduced the cost and simplified the operation.

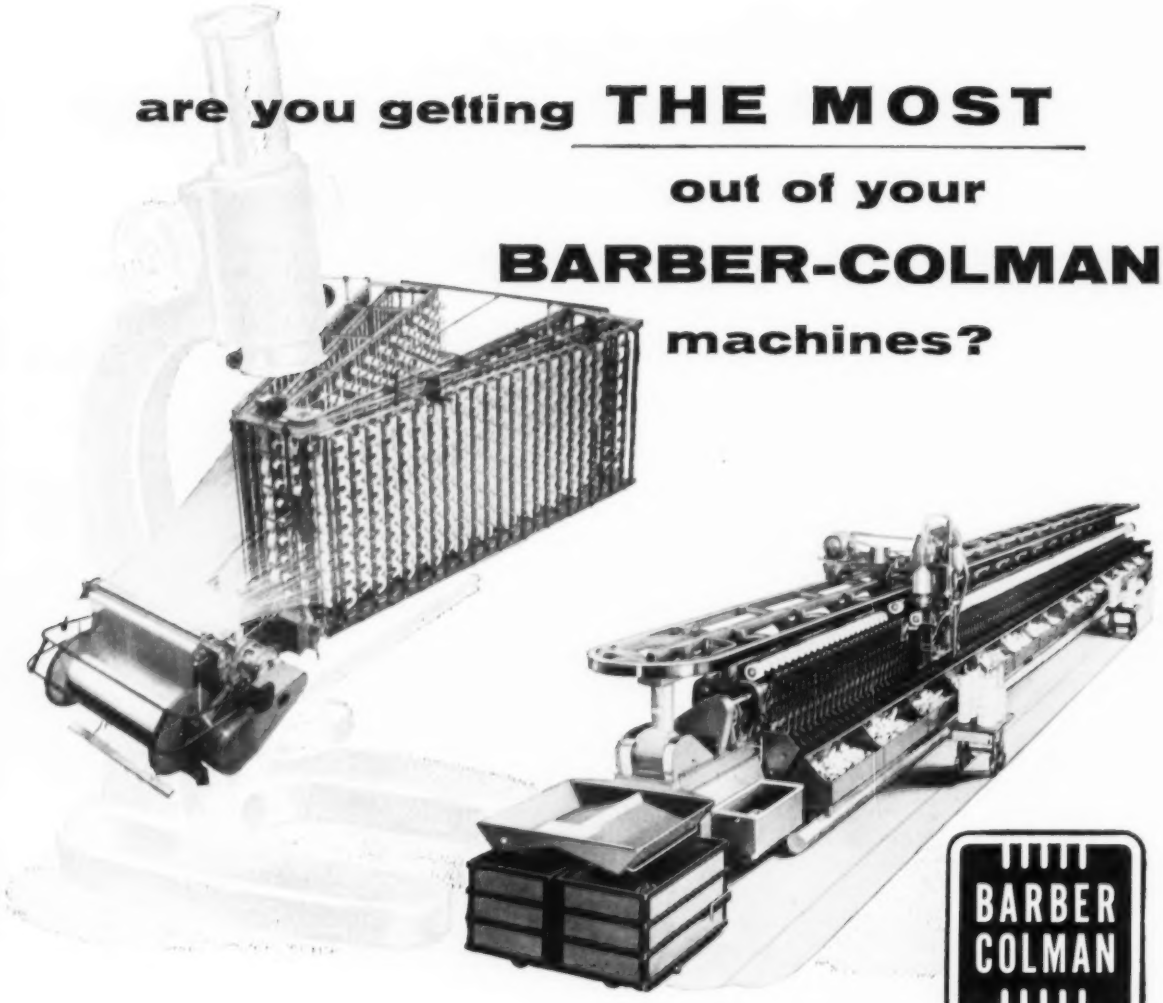
Subsequently, thousands of yards of denim yarns have been successfully sized without appreciable changes in normal operating conditions. These latex-sized denim warp yarns have been woven and finished with no difficulty.

OF THE WIDE variety of synthetic latices commercially available today, the butadiene-acrylonitrile type has been found to provide the best properties as a basic component for a successful warp size.

While the work that has been done thus far utilizing the butadiene-acrylonitrile latices and modifications thereof has proved to be of considerable merit, it does not preclude the possibility of other latices, such as perhaps the butadiene-styrene types, being utilized in specific end-use applications where certain desirable properties can be obtained by the use of these latices in other warp sizing applications.

The many advantages that have been demonstrated by the use of synthetic latices in the sizing of denim warp yarns indicates that the potential improvement in many important standard textiles should be readily demonstrable. This should not only lead to the enlargement of present markets for such fabrics as industrial and military uniform fabrics, but should also open new and heretofore unexplored markets. This can be compared to the successful blending of natural and synthetic fibers where the synthetic latex may act as an important component in both

are you getting THE MOST out of your BARBER-COLMAN machines?



Any time is a good time to take a close look at your Barber-Colman Automatic Spoolers, Super-Speed Warpers, Warp Drawing Machines, and Warp Tying Machines—to see if they are continuing to deliver their original high performance. You have a substantial investment in these machines, and you are entitled to a continuing return on that investment. It would be a good idea to be sure that nothing in the *performance* of the machines is keeping you from getting that return.

MAY WE HELP YOU?

Our Service Department people are available to assist you in determining the operating condition of your machines and to indicate what, if anything, might be needed to put them at their peak of efficiency. The men who do this work are thoroughly experienced on all Barber-Colman machines. If you are interested in taking advantage of this service, just get in touch with your regular Barber-Colman representative, or write direct to the main plant.

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There once were 2 brothers named Twitch
One was poor and the other was rich
When the poor one was dressed
In his Coloray best
*You couldn't tell which one was which!**

*SERIOUSLY—Coloray colors look very rich indeed. A fabric woven entirely of Coloray rayon has inviting depths of subtle, glowing color...completely different from the ordinary tones produced by ordinary dyes. Because color is not a coating, in Coloray. Color is the heart and soul of Coloray! This rayon fiber is *infiltrated by color through and through* via Courtaulds' solution-dyeing process. That's why you can get the most expensive hand-woven effects in Coloray rayon...as well as a tremendous range of luxury effects...the look of imported tweeds and heathers and flannels and knits and so on! All this and a wealth of colorfastness too is yours in soft goods made with Courtaulds' Coloray fiber. The fiber that makes merchandise look better, behave better, *sell* better!

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Rayon fiber with Captive Color..."*can't escape!*"

For further information, write:

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YOUR GUIDE

to

SYNTHETIC DETERGENTS with SUPERIOR WETTING, PENETRATING and EMULSIFYING PROPERTIES

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ORVUS K LIQUID
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. . . basically sodium alkyl sulphate built with complex phosphate.

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. . . blend of anionic synthetic detergent with complex phosphates. A highly effective dispersing agent, with an "extra" to give whiter whites.

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ORVUS WA PASTE
. . . Alkyl sulphate.

All the products listed here are available in convenient, easy-to-use, easy-to-measure forms and in convenient sizes.

Kyro EO

A superior detergent, wetting and re-wetting agent and dye assistant on all types of fibers. A nonionic of the alkyl phenol polyethylene oxide condensate type. Clear liquid. Has a pH of about 7.5.

PROCTER & GAMBLE, Textile Finishes Sales Department,
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Makers of **OLATE, PROXOLS, ORVUS** *and* **KYRO** *products . . . for smoother textile processing*

natural and synthetic fiber fabrics.

CORD DIP

A combination of thermosetting resins and butadiene-styrene latex is being used in the application of cord dip used in tire building. Fibers in the cord fabric are given a light latex saturation. This improves the adhesion of the rubber to the cord and contributes toward the tires' over-all performance.

A 20 per cent latex and resin solution is used ordinarily for tire cord dipping, and from 4 to 8 per cent pick-up is experienced, dependent upon the fiber in process. These latex-resin combinations can be applied successfully to nylon, rayon, or cotton cord.

A uniform dip is applied by immersing the cord in the latex solution under rigidly controlled conditions of time, temperature, and tension. After application, the cord is removed and dried in large ovens, becoming an integral part of the tire after cure is effected.

Over 9,000 long tons of latex, butadiene-styrene (GR-S) and natural combined, were consumed during 1955 in a nation with 51 million automobiles. The outlook for 1965 is 67.5 million automobiles and 63 million replacement tires. This probably means at least an additional 30 per cent of present consumption, or 2,000 - 3,000 more tons of latex will be consumed annually in the next ten years for cord dip alone.

PIGMENT BINDING

The use of latex in the decoration of textiles is gaining industry-wide momentum. This usage is attributed to the requirements imposed by fashion, quality, and color-conscious consumers.

Where latex is used in fabric work, the emphasis is on a binder which will prevent color rub-off or crocking. In textile printing, the latex binder is frequently combined with a thermosetting resin. Nitrile latices are widely used because of their high pigment binding characteristics. Acrylic latices are used where good light aging is a problem. Silicone water repellent resins and polyvinyl acetate resins tend to improve crock fastness in naphthol-dyed goods.

The growing use of synthetic fiber blends has greatly encouraged the development of pigment dyeing and printing systems. By using pigment colors, the very difficult task of dyeing certain of the synthetic fibers is eliminated.

Latex finishes are currently used for application to over-coat printed cotton and rayon ribbons, and are equally applicable to viscose-acetate fabric. These latex applications to the printed surface of textiles significantly improve the wash fastness of the material. The exact degree of improvement depends upon many factors, some of which are the application technique, the weight of latex applied, the particular latex selected, and the pigments or dyestuffs involved.

Finishes that will have a significant effect on performance can be applied at as low a level as ½ ounce dry weight of polymer per square yard. However, for most applications, a coating weight of 1 - 2 ounces/square yard is recommended.

Application of a thin latex film on printed textiles will give complete transparency. However, in most cases, there will be a noticeable effect on the color. Usually this will result in a slightly darker and more intense shade.

In pigment dyeing, a coating system based on butadiene-styrene latex has unusual capacity for binding pigments and fibers. This system results in substantial savings in the dyeing of low-cost fabrics where the margin of profit is usually very low. The latex system improves wet strength, and color rub-off is reduced to a minimum as compared to systems using organic dyestuffs.

During the operation, insoluble pigments become mechanically bound to the fibers through the film-forming properties of the latex. Better light aging of fabrics is experienced and dyeing costs are reduced. Lower equipment costs are also possible because of the simplicity of the process.

FINISHING

This section is termed "Finishing" in the broad sense, since we plan to mention use of various latices alone or in combination with other synthetic polymers for application of a decorative or utility effect to a textile surface. However, there are manifold uses not strictly of a "finish" nature which are included under these categories.

Furthermore, we would like to suggest that many new applications are possible if one considers the properties that can be imparted to a host of present day textiles.

It may serve a useful purpose now to list some of the known uses of latices for coating, impregnating, or saturating textile fibers, yarns, and fabrics. This list is not presumed to be all-inclusive, but rather typical and indicative of principal uses, and of the potentialities existing:

Simulated leather
Protective clothing
Nylon hosiery finish
Luggage
Automotive trunk linings
Coatings for jute felts
Shade cloth
Conveyor belting
Primer coatings for dispersion resin and rubber cement coatings
Embossed finishes
Finishes for drapery
Awning finishes
Latex foam backing and cushioning
"Permanent starch" effects
Flame resistant treatments
Modification of resin finish
Heat sealable treatments to coating quality fabrics
Automotive head linings
Automotive door panels
Solvent- and grease-resistant coatings

As may be gathered by a close examination of the above list, there are two important variables in this type of product. First, the improvement of a standard product by means of a latex treatment. Secondly, the development of new products. Both approaches can pay large dividends in widening present markets and creating new markets.

It is particularly important to remember that both the ultimate consumer and the industrial fabricator have been demanding improved performance, and new and more attractive designs in the textile products they purchase. Today's markets are becoming more and more competitive and, as someone has aptly phrased the situation, "You have to run fast just to

What you should know

What is CMC Warp Size?

CMC Warp Size is a water-soluble product made from cellulose, and is a true film-forming material which gives a smooth, tough, flexible surface on warp yarn with a minimum add-on.

Why use CMC Warp Size?

Starch, used traditionally, is a good sizing agent. Why, then, consider a change to CMC Warp Size? Because:

1. It reduces steam pollution. CMC Warp Size is sufficiently resistant to bacterial attack so that it adds virtually nothing to the overall B.O.D. (biological oxygen demand) resulting from desizing wastes. In mixtures with starch the protection of the CMC Warp Size film acts to retard oxidation of the starch. In such mixtures the actual B.O.D. is suppressed to an amount below that which would be expected from the starch alone.

2. Smaller amounts of size are required. Formulas containing two parts of starch and one part of CMC Warp Size are being successfully used at an add-on of 7.0 to 7.5% of the yarn weight. Excellent adhesion and superior film-forming properties make such a low add-on possible.

3. It can be desized without enzymes. Since CMC Warp Size is soluble in cold water, it can be easily washed off without costly and time-consuming enzyme desizing. Mixtures with starch containing two parts of starch and one part of CMC Warp Size can be removed by a mild alkaline wash.

4. It forms more uniform solutions. CMC Warp Size is odorless and soluble in cold water. Viscosity changes little on prolonged stirring; solutions are stable, leading to greater flexibility in scheduling. It does not mold, ferment, or form skins. Equipment is more easily cleaned.

5. It allows lower weave-room humidities. CMC Warp Size has been successfully employed at humidities ranging from 75 to 85%. Lower humidity increases to weave-room comfort, cleanliness, and ease of maintenance.

6. It reduces shedding. High film adhesion and flexibility of CMC Warp Size greatly reduces the amount of size powdering at the split rods of the slasher. It also reduces shedding of size and fibers during weaving, thereby lowering loom-cleaning time.

How much can CMC Warp Size reduce stream pollution?

In many finishing plants, stream pollution due to starch desizing operations accounts for 50-70% of the total sewage load. In a starch-CMC Warp Size mixture the B.O.D. is theoretically proportional to the amount of starch present. In actual mill practice the suppressing effect of CMC Warp Size in a 2-to-1 starch-CMC Warp Size mixture has resulted in a 70-85% reduction in B.O.D. resulting from desizing.

How does CMC Warp Size affect weaving performance?

In actual mill operations starch-CMC Warp Size compositions have been shown to be equivalent to, or superior to, starch. With low-sley fabrics, reduction in warp stops and increases in weaving efficiencies were most marked.

The following tables show some of the improvements in weaving performance which have been observed in actual mill experience.

How does the cost of CMC Warp Size compare with regular Starch?

The cost of the starch-CMC Warp Size combination is comparable to that of straight starch, due to the lower add-on necessary. Savings are also realized in the elimination of enzyme desizing and reduced water and steam requirements. The usual starch formula, including cost of additives, costs about 8.5¢ per pound of size. Starch-CMC Warp Size combination costs about the same as regular starch when used at the suggested add-on of 7.0-7.5%. This is shown in detail in Table 4. These cost computations were based on the equation:

$$\text{Cost/100 lbs. of Yarn} = \frac{100\,(\text{Total Extract-Blank})}{100-\text{Total Extract}} \times \text{Cost/lb. of Size using current market prices.}$$

about CMC Warp Size

TABLE 1

REDUCTION IN WARP STOPS ACHIEVED WITH CMC WARP SIZE

Study* No.	1,000 Picks Studied	WARP STOPS** Starch	2:1 Starch: CMC Warp Size	Decrease in Warp Stops
1	23,600	0.029	0.024	17%
2	27,100	0.028	0.022	21%
3	15,900	0.025	0.025	—
4	13,600	0.027	0.025	7%
5	8,200	0.035	0.027	23%
6	7,200	0.035	0.031	11%

*Studies 1 through 5: 21s carded yarn, 128-count wide sheeting; Starch add-on: 12.5%. Starch: CMC Warp Size add-on: 8.0%
Study 6: 34s combed yarn, 180-count wide sheeting; Starch add-on: 13.5%. Starch: CMC Warp Size add-on: 8.5%

**Stops per 1,000 picks per 1,000 ends. Includes only those warp stops which could be affected by size, i.e., front stops, back stops, matups, and loose ends.

TABLE 2

RELATIVE EFFICIENCIES WITH STARCH AND 2:1 STARCH: CMC WARP SIZE AT 85% RELATIVE HUMIDITY

Sized With	No. of Looms Checked	RELATIVE EFFICIENCIES* 1st Week	2nd Week
Starch	65	98.4	98.7
2:1 Starch: CMC Warp Size	53	98.6	99.8

*Per cent of established standard efficiency:
Starch add-on: 13.0-13.5%
2:1 Starch: CMC Warp Size add-on: 8.0-8.5%
Fabric woven: 180-count wide sheeting using 34s combed yarn.
Checks made over 2-week period when CMC Warp Size was first being introduced into mill.

TABLE 3

RELATIVE EFFICIENCIES WITH STARCH AND 2:1 STARCH: CMC WARP SIZE AT 80% RELATIVE HUMIDITY

Test No.	100% STARCH No. of Looms	Relative Efficiency*	2:1 STARCH: CMC WARP SIZE No. of Looms	Relative Efficiency*
1	23	0.993	35	0.986
2	12	0.958	29	0.990
3	53	1.020	70	1.050
4	14	0.972	27	1.005
Average	102	1.000	161	1.018

*Per cent of established standard efficiency:
Starch add-on: 13.0-13.5%
2:1 Starch: CMC Warp Size add-on: 8.0-8.5%
Fabric woven: 180-count wide sheeting using 34s combed yarn.

TABLE 4

WARP SIZE FORMULATION COSTS

Cost/100 lbs of Unsized Yarn At Add-on* Of:	SIZE FORMULA Regular Starch	2:1 Starch: CMC Warp Size	100% CMC Warp Size
3.0			1.09
3.5			1.27
4.0			1.46
4.5			1.65
5.5		1.01	
6.0		1.11	
6.5		1.21	
7.0		1.31	
7.5		1.41	
8.0		1.51	
8.5		1.61	
9.0		1.72	
10.0			
11.0	1.10		
12.0	1.21		
13.0	1.33		
14.0	1.45		

*Add-on is in % of sized yarn.

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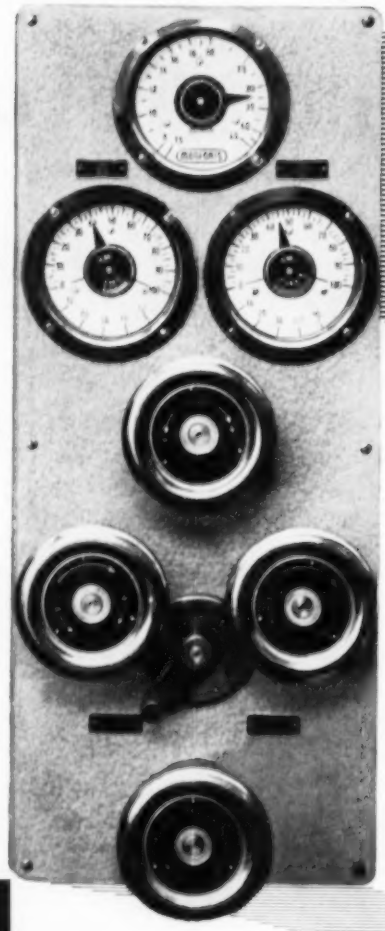

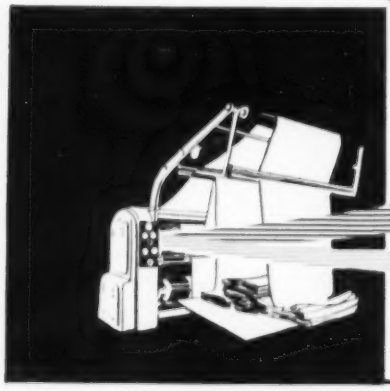

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keep up with the pack."

The polyvinyl chloride polymer and copolymer latices find their way particularly into the simulated leather, belting, protective clothing, and similar outlets. Their high abrasion resistance, ease of cleaning, flame resistance, solvent and grease resistance, and compatibility with various plasticizers recommend them highly for these applications. Also, their cost is among the lowest of any latex available.

Butadiene - styrene copolymer latices are widely used for the very large latex-foam field, primarily in combination with natural rubber latex. They would be used exclusively for this purpose if their "wet-film tear strength" were equivalent to that of natural latex, because of the low cost and much more stable cost structure.

We believe that the numerous synthetic rubber latices being developed today are approaching the wet strength properties of natural latex so closely that it should be possible to produce an all-synthetic latex foam before long.

The acrylic-type latices are playing an increasingly important role in the production and development of new fabric coatings. Although they are relatively new, their excellent resistance to discoloration by sunlight is gaining wide acceptance in many textile fields. Awning coatings, drapery finishes, and upholstery coatings, both household and automotive, are some of the fields which require such properties and are using large quantities. With the spread of these products into such fields, undoubtedly there will be a continuing demand for improved aging-resistant products for many other applications.

We have mentioned but a few of the actual applications for various synthetic latices in the textile industry. These products are being manufactured every day, some in increasingly larger quantities. There are also many new and as yet completely unexplored avenues of development involving textiles and latex. For example:

Treatment of rainwear fabrics to impart durable water-resistance and abrasion resistance without impairment of the water vapor transmission property ("breathability") or other desirable fabric properties—a properly constructed, lightweight fabric, with these properties should offer a very large market potential; treatment of woolen overcoatings to impart greater water-resistance; treatment of woven or nonwoven fabrics with light latex coatings, embossed and/or printed for a non-slip, built-in pad for improved table cloths with a wider utility and appeal.

CONCLUSIONS

The growth of the textile industry, like most other industries, is dependent upon technological advances which permit both the upgrading of present products and the establishment of new products on a continuing basis. The frequent changes of market and consumer demands require that considerable effort be exerted at all times in order to be in a position to take advantage of new markets and new technology which permit the rather sizable growth that is necessary for existence in today's highly competitive economy.

The total volume of the textile industry identifies it as one of the leading industries in the United States. Being a leader with large market potentials always invites others either within the industry and/or other industries, to attempt to obtain a portion of that market. This is one of the basic concepts of free enterprise. However, in order that one may remain a leader, it is essential that he keep at least one step ahead of his competitors at all times, to insure his continuation as a leader.

Chemistry and textiles are certainly not strangers. The textile industry is, and has been for many years, one of the largest consumers of chemicals. It is only fitting that the great strides that the textile industry is making is due in a large part to the cooperative efforts of both the chemical and textile technologists, who have been able to accomplish many improvements and, many new techniques, which together account for the rapid advancements being made.

It is becoming increasingly evident that the synthetic latex industry is going to play an even more important role in the future advancement of textile products and processes than it is today. Based on these trends which have been established, and the potentials which are real and ready to be realized, the synthetic latex industry is supporting this progressive era in the textile industry by developing a sustaining and broadening technology which will be a major contribution to the rapid growth and continued record volume of the textile industry in 1957 and the ensuing years.

ACKNOWLEDGMENTS

The combined efforts of many led to the development of this article. Special assistance was rendered by the Goodyear Sales Research Department in the compilation of statistics, and the Sales Service and Promotional Sales Sections of the Chemical Division in the assemblage of facts and literature references.

Acknowledgment is also accorded to Gordon Campbell, assistant manager of the Coatings Department, William F. Gerrow, Atlanta district manager of the Goodyear Chemical Division, and John S. Brice, Atlanta representative, for their noteworthy contributions based upon field experiences with the southern textile industry.

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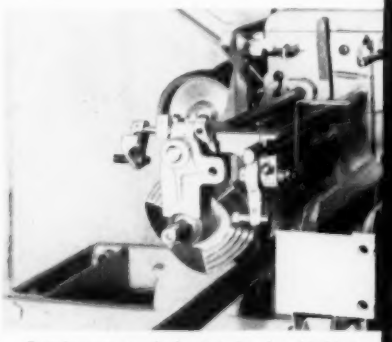
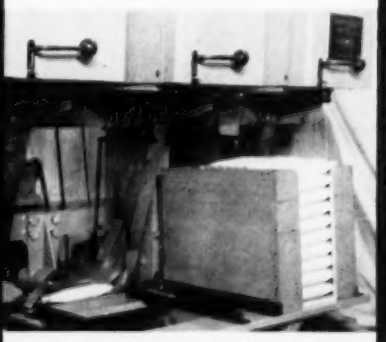
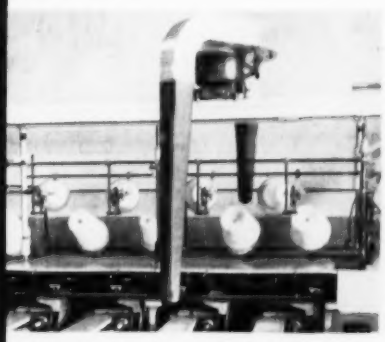


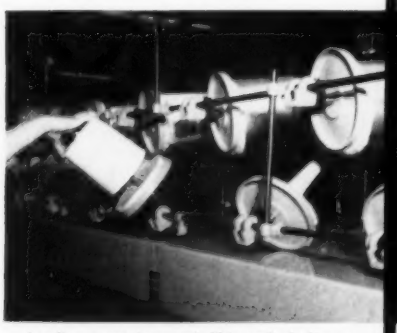
Exterior cam permits knots to be placed behind traverse and on outside of bobbin.



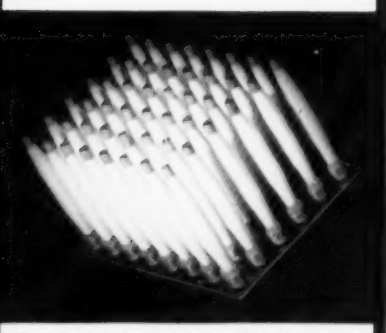
Automatic filling box stacker for spun yarns. (Automatic pinboarding for filament yarns).



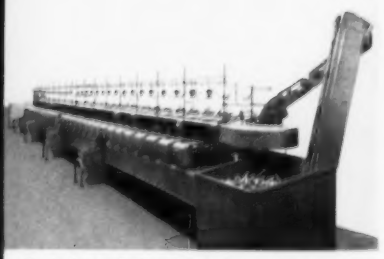
Automatic lint cleaner. Overhead traveling blower type.



Loading magazine creel. This and piecing up broken ends are only manual operations.



Model 66 bobbins. Note perfect build and uniformity. No starting tails.



Typical installation showing centralized empty bobbin hopper with capacity of 2000 bobbins.

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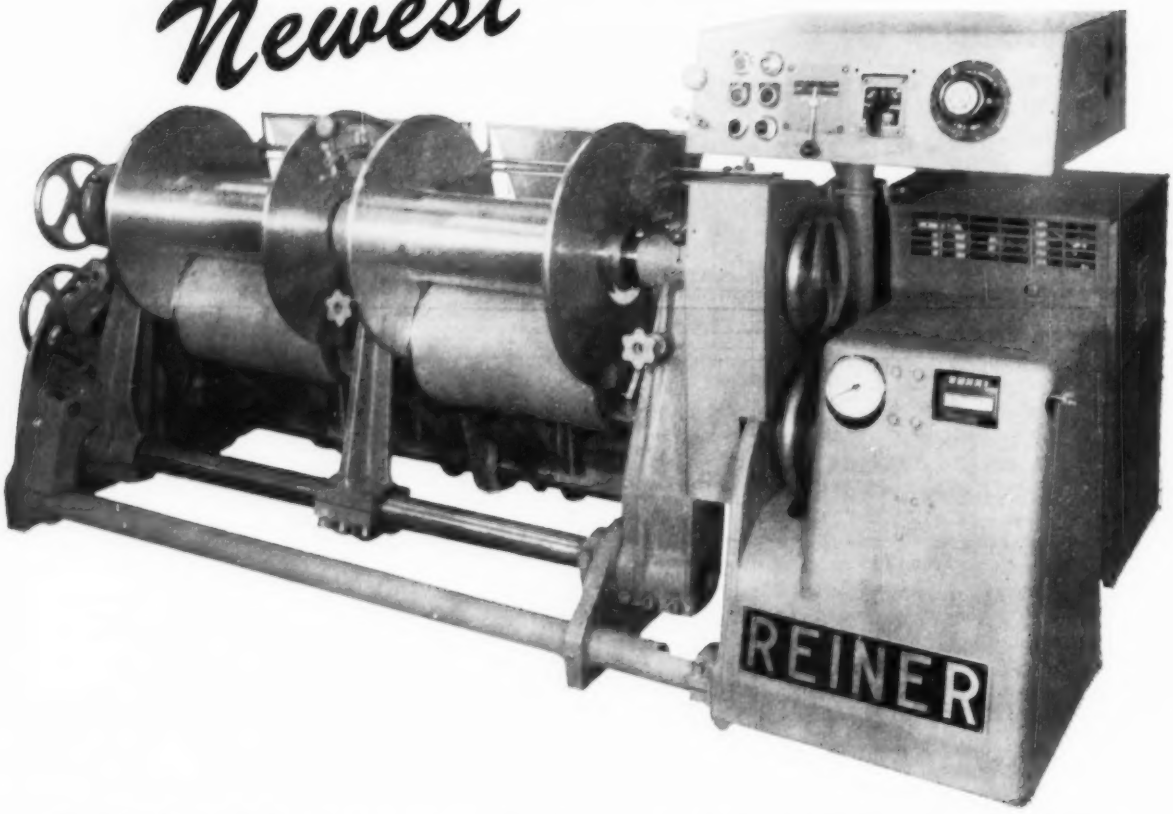

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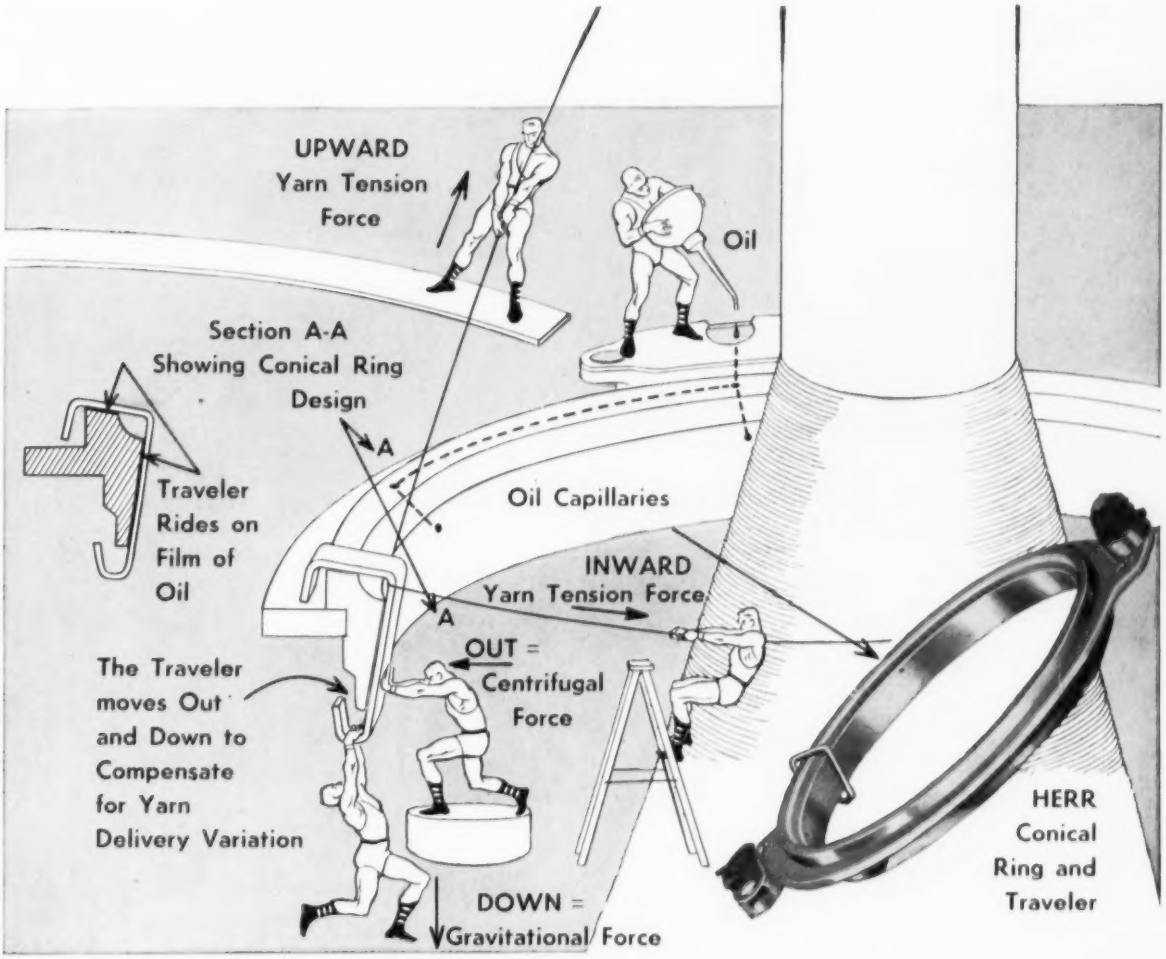

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Improved drum friction for Komets

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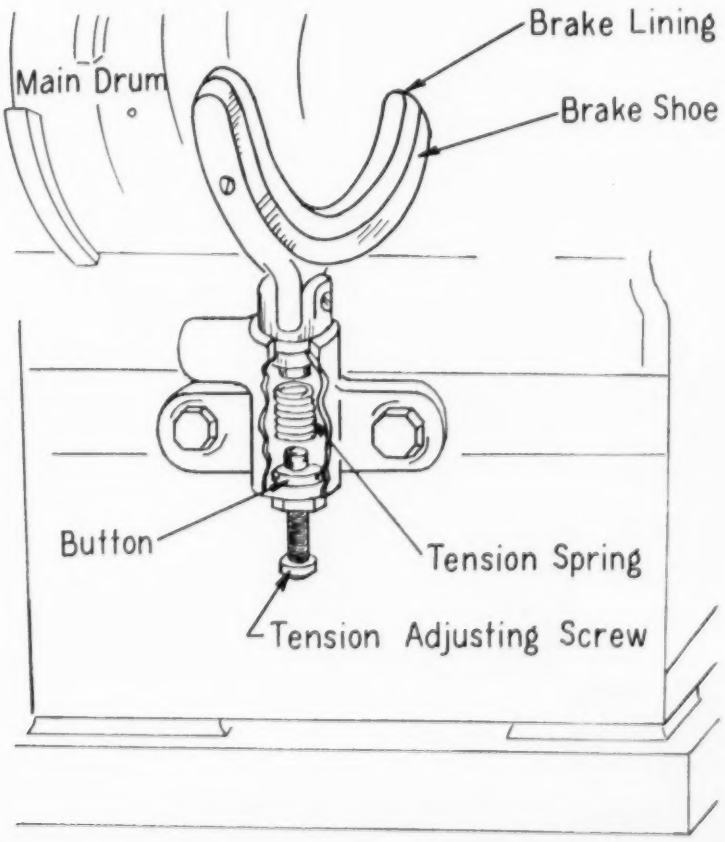
WITH the extremely competitive condition now prevalent in the seamless hosiery manufacturing industry, it is more necessary than ever for mill personnel to be on the alert constantly for ways and means to reduce production costs.

Modification of existing equipment for more efficient operation is, of course, one approach to the problem. And this is the way owners of many Komet-machine-equipped mills are effecting savings in their knitting departments.



AN IMPROVED drum friction which can be installed on any Komet knitting machine in about 15 minutes pays for itself in three months, says mill men who have replaced the old style drum friction with it.

There are two major improvements in the new device. Refer to the accompanying sketch and note that the brake shoe and brake shoe lining are 50 per cent longer than the old style. Also, this new model has a much needed tension spring.

Any knitting machine fixer can readily see that the longer brake shoe and lining will provide more positive friction on the main drum for a much longer period of time without excessive pressure from the adjusting screw.

The adjusting screw pushes the button against the spring which eliminates solid pressure of the brake shoe against the drum. The spring, in addition to keeping constant pressure against the brake shoe and lining, also compensates for gradual wear of the lining.

Thus, this simple improvement actually prevents main drums from faulty movement, saves sliders and needles, prevents waste and damage to machine parts, and saves labor.

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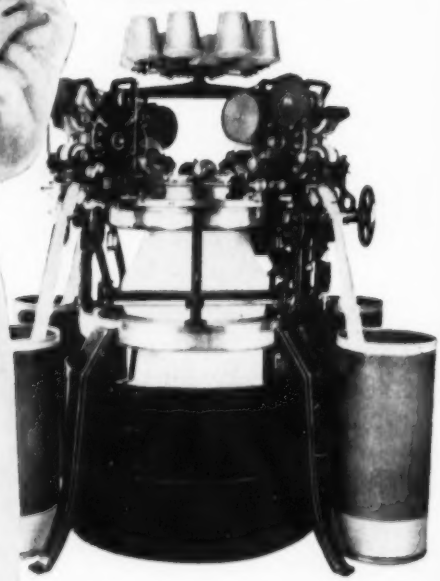
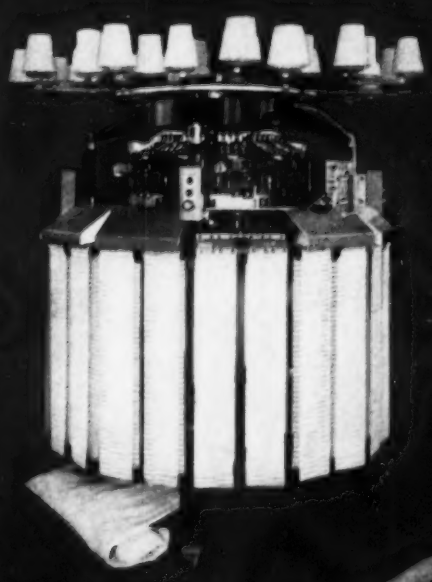


Pile Fabric Knitting Machine



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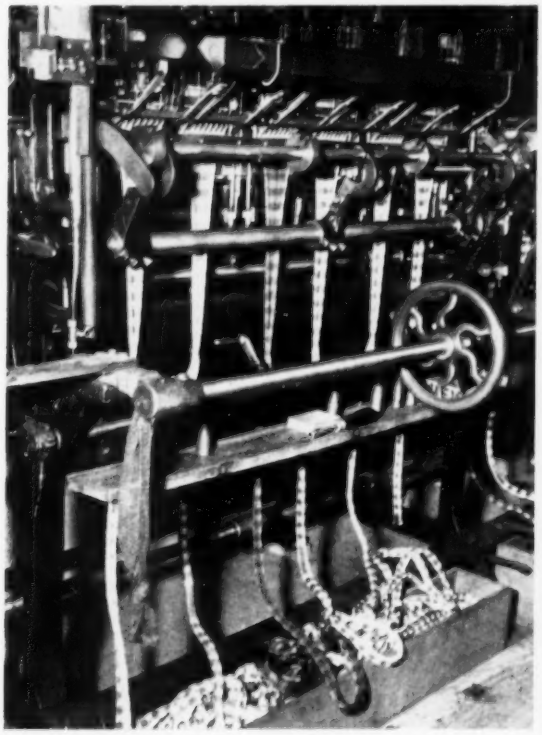
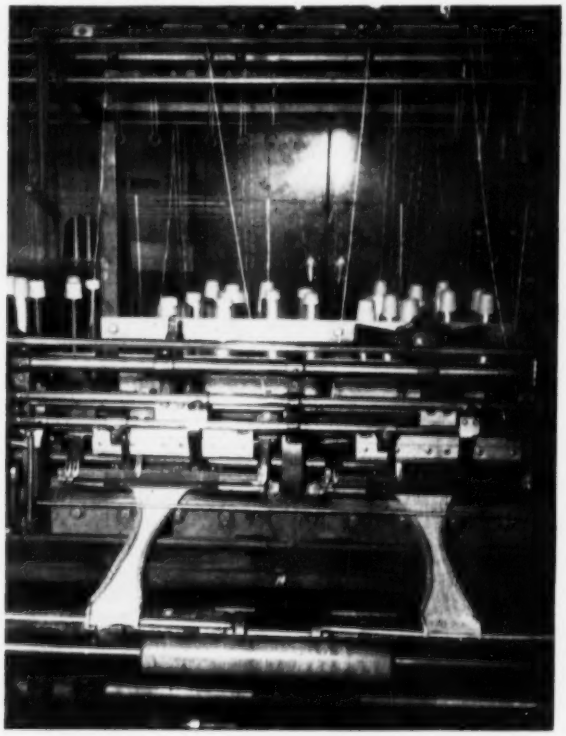
Paget machine (below) is first F-F machine used for neckwear. Needles have a reciprocal motion in a horizontal plane. Multiple feeds (nine for each head) allow intricate patterning; shown being knitted is a plaid effect. Converted F-F hosiery machines (right photo) are usually used for neckwear. This one is 45 gauge with every other needle removed. Generally, conversion requires installing correct gauge (27), use of a sinker with a longer nose than usual for hosiery, and installation of additional carriers so that there are four (carrier tubes are heavier than those used for hosiery). This machine is knitting one tie per head; others knit two. Choice usually depends on production demands and nature of work; fancy work usually requires more room and limits knitting to one tie per head. Maintenance of F-F machines knitting neckwear is about the same as with hosiery machines.





How full-fashioned neckwear is made

Paul O. Kiessling & Co. is a specialist in an unusual field

Staff prepared Exclusive

ONLY A HANDFUL of knitters in this country specialize in full-fashioned neckwear. This work is usually done on converted hosiery machines, but machines have also been built for neckwear.

One mill which does specialize in this field is Paul O. Kiessling & Co., Glendale, N. Y. In operation since 1919, the firm now uses both types of machinery.

Knitting full-fashioned neckwear evolved from hand crocheting. All efforts to date have been designed to imitate the crochet effect so as to obtain the characteristic pattern, which stands out and lends "life" to a tie; the hand crafted appearance is also an important point in the basic product.

From hand crocheting, present day manufacturing was developed through a period of flat hand frame knitting, then to work on the Paget upright machine, which was built originally for fancy hosiery knitting; and finally to adoption of the present day full-fashioned hosiery machine, converted to do the job.

While it is rare, there is a full-fashioned machine built especially for neckwear.

THE CROCHET EFFECT is achieved on the full-fashioned machine by one or more needles containing a double loop, and one or possibly two needles containing none. This is arrived at in standard fashion by the motion of the picot bar of the lace attachment. It transfers the stitches it picks up according to the pattern set by the number and spacing of needles in the picot bar and by the pattern drum, which throws this transferring motion in and out of action.

Generally, transfer of stitches by motion of the picot bar in neckwear work is limited to a distance of one needle per course, since loop stretching occurs in movements greater than this.

By varying the needle pattern

"HOW!"—This man is wondering how he can get needles for top-quality tufting. Silly, isn't it, when practically everybody knows one can get top-quality needles for tufting, felting, knitting *and* sewing from...**THE TORRINGTON COMPANY.**

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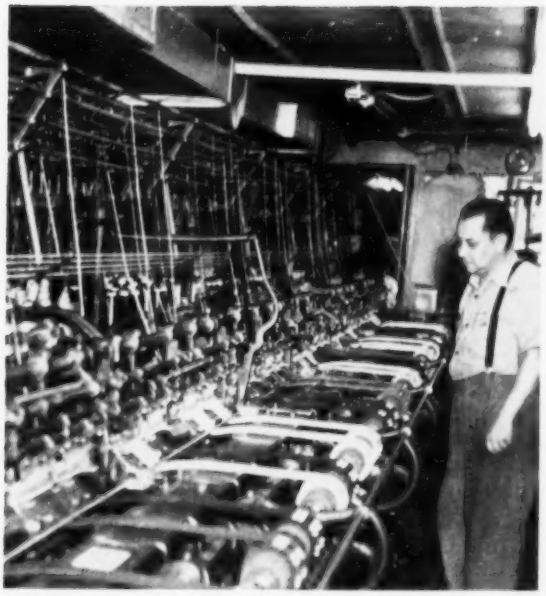


Built for neckwear, F-F machine above usually knits two ties per head. The machine can put in an idle course (no yarn fed) so that only one half of a round (two courses) is actually knitting. This makes for a finer and neater looking striping. Tension rings for the 900-denier fed yarn must be somewhat heavier than usually used for hosiery, and air conditioning is a must in the summer time. If too much moisture is in the air the rayon tie will sag and stretch; if too little, work will not run. Machine also can make scarves. Machine shown is a Kalio. Seaming on Singer machines (right) joins fashioned tie edges. The seam is sewn with inside out; seam will be at the back center of the tie. During knitting, after body of tie is made, three plain knitted stripes are made; center one is cutting guide.

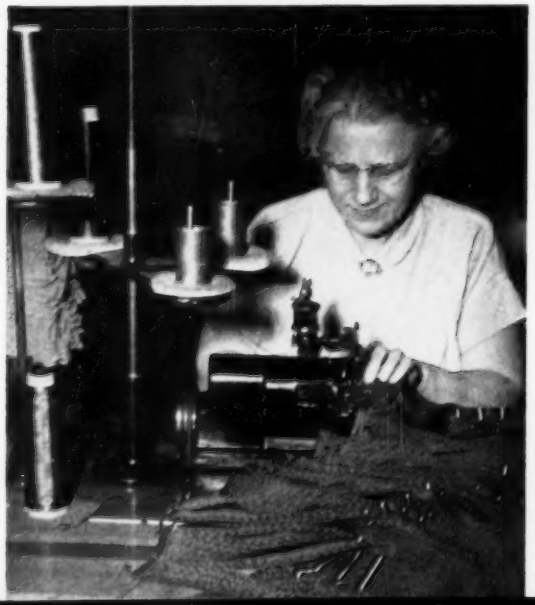
of the picot bar, and the relationship between and pattern of the two types of courses [those containing action of picot bar (lace dipping) and regular courses], quite a variety of basic stitch effects can be obtained with a crocheted appearance.

STYLING full-fashioned neckwear requires consideration of several variables.

The basic stitch is generally semipermanently set by the needle arrangement on the picot bar; the relationship between plain courses and dips is usually varied in 3-1, 3-2, 3-3, or 1-1 order. In obtaining bias stripe effects, the bar is dipped once every two courses.

Directly dependent on the type of stitch set up is the fashioning required to arrive at a required shape of tie. While shapes vary seasonally, current market requirements call for a narrow tie. Since most machines at Kiessling are 27 gauge, this requirement is filled by using 70 needles to get about a 1¾-inch width for the

Overlocking on Merrow machine follows (below) to bind up both tubular ends. From the manufacturing standpoint, knitted ties are more convenient to handle than woven ties, since large variety of patterns and color combinations per pattern required by the market can be made with minimum of trouble. Finishing off ties ready for sale requires pulling in of loose ends at both ends of tie (right). At the customer's plant, slip bands are sewn in on the "wrong" side of the neck to prevent stretching. Labels are also put in.



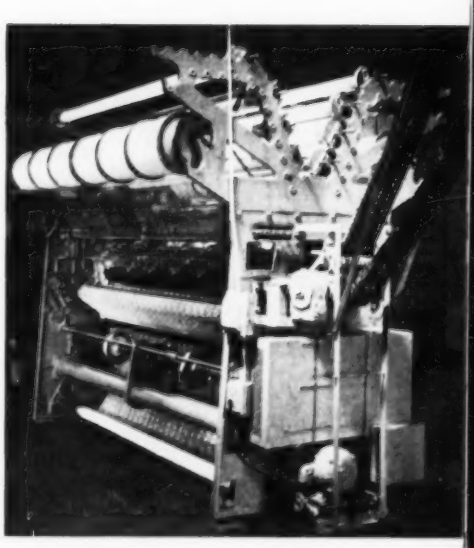
You can see why the NEW KIDDE KNITTER is revolutionizing the lace industry

Look at that lace. It's elaborate, intricate and fine – *much* closer to imported lace than any other made on knitting machines. Ten guide bars on the Kidde Raschel Knitter have made these incredibly beautiful designs possible – and have revolutionized the whole lace industry. The ten guide bars even give you liners to outline the gimp. And consider the speed! – up to 300 courses per minute. It will run with anything from 2 to 10 guide bars and it'll make virtually anything you want from tulle to elastic fabrics. No wonder it's already the most widely used Raschel type machine in the world.

If you specialize in any one of the following fabrics: elastic fabrics, tulle, and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or underwear fabric, or if you need versatility encompassing many of these types, the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details to Department KLG1.



The new Kidde 10-bar Raschel Knitter

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

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MANUFACTURING CO., INC – 42 FARRAND STREET – BLOOMFIELD, NEW JERSEY

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The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

long end of the tie.

The short end of the tie is usually about four needles narrower than the long end, and a neckband is usually fashioned between the two.

Two basic types of ties are made at Kiessling—rayon and silk. The rayon tie, accounting for most production, usually uses 900-denier bright dyed rayon (three ends of 300 denier knitted together); and 27 gauge has been found to be best suited for both types.

As far as color is concerned, solid yarn dyed effects are common, but machines are capable of striping up to four colors; a three-color combination is about right. Neckwear is generally sold in "sets" of several color combinations of the same pattern; there was a time when there were six combinations in a set, but today an 18-color set is common. The mill carries basic yarns in about 30 colors for these requirements.

Keep lint off body machine stop motion parts

EDITOR TEXTILE INDUSTRIES:

The electric stop motions on our knitting machines have several parts which naturally get out of order now and then and cause us a lot of expense in the way of bad work, fixer time, etc. The most trouble we experience, however, stems from a single source — lint.

Lint collects under the hair pins on the stop motion ring and stops or blanks out the motion. This lint must be removed as often as it collects; but to assure troublefree performance, a cleaning schedule is necessary to remove the lint before it collects in quantity.

We wipe the lint from the top and bottom stop motion each morning at starting time. While we are doing this we check the freedom with which the yarn passes through the stop motion.

The one part most often overlooked is the contact point that supplies the stop motion ring with the current. Sneak lint accumulates there and eventually insulates the slat-like contact from the ring. We have developed a habit of passing our fingers around the ring several times a shift, and by so doing we have minimized the troubles from that source.

CONTRIBUTOR No. 8911

Knitting and dyeing nylon staple half-hose

■ IN KNITTING, tensions on the yarn should be kept at a minimum. The knitting machines should be kept clean and in good operating condition. Cams should be set accurately and the settings checked frequently. Snagging of loose fibers by the needles can be eliminated by using waxed yarn having adequate twist.

Precautions should be taken to insure that the yarn or fabric is not soiled with dirt or grease. Any stains should be removed before the yarns are heat-set or preboarded because heat tends to "fix" dirt and grease in the yarns, making it very difficult to remove.

There are advantages in knitting from plied yarn. Half-hose made from plied yarn will retain their shape and appearance longer than those made from singles yarns. The yarn counts given in the accompanying table have been found satisfactory. If two-ply yarns are used, correct the count accordingly.

Yarn Counts for Nylon Half-Hose

Machine	Cylinder	Yarn Count (Worsted)	Ends
200 needle	3½"	1/40's	2
160 needle	3½"	1/30's	2
132 needle	3½"	1/20's	2
108 needle	3½"	1/18's or 1/20's	2

Opinions vary as to the knitted size. Generally, a safe rule is to knit the hose a half size larger and board them down to size.

The following sequence will produce all-nylon half-hose that have the required flat appearance for sales appeal.

Knit—

Preboard—3 to 6 minutes at 15 psig steam pressure.

Dye—use acid dyes that have good wash fastness.

Dry—dry in an oven on forms, or on final-boarding forms.

These heat-setting or preboarding conditions are satisfactory for regular crimped nylon yarn. Conditions for crimp-set yarn will need to be more severe; tests indicate that 35-40 psig steam pressure is satisfactory. Boarding only is satisfactory for nylon/wool blends containing up to 35% nylon.

Suggestions for yarn preparation appeared on p. 165, TI for December, 1956.

From Nylon Bulletin N-81, Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc.

1 Position for viewing to determine what is wrong with the needle. See that the back and sides of the needle are straight, and that the beard is in line with the groove and square with the butt of the needle. Note correct position of needle in the pliers, and sheet of white paper for contrasting background.

2 Place thumb on one side of needle and two fingers on opposite side to straighten needle back. Apply pressure with thumb as needed. Pliers are maintained in position 1, eliminating unnecessary movement. Operator returns to position 1 after each bend to examine needle and determine next move.

How to straighten F-F needles

A method which gives fast and efficient results, with minimum needle handling

by S. W. Bridges
Exclusive

THE FIRST and most important factor in straightening full-fashioned needles is a suitable background and enough light to provide good visibility for working on the small needles. Needles can be straightened properly only if the operative can plainly see what he is doing.

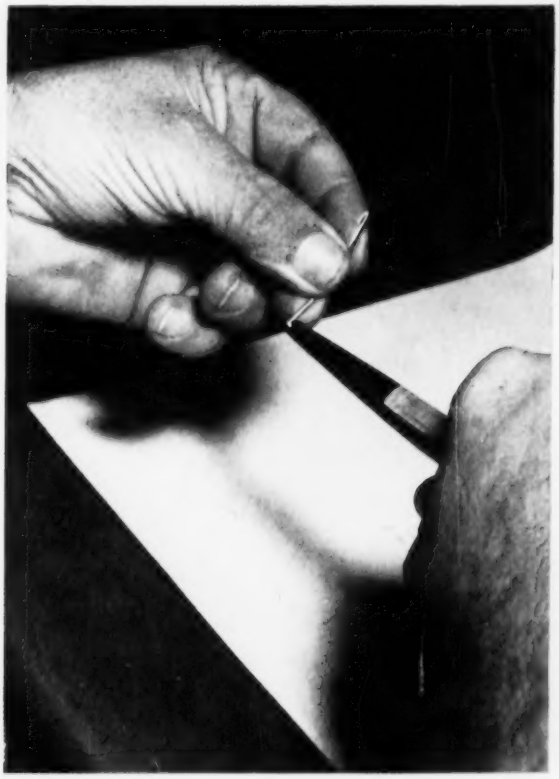
After good lighting and correct contrast are established, the next important factor is to see that the trainee or person straightening the needles uses the correct eye for the job. A single test should be made to determine if the person is right- or left-handed. A right-handed person should use the pliers in his right hand for performing the straightening operations, and he should use his right eye. A left-handed person should use his left eye and left hand in performing the operations.

Good vision is a necessity; a person should have 20/20 vision in the eye used to examine the needles. For example, a person using pliers in the left hand should have 20/20 vision in the left eye. The Orthorater or some similar method may be easily used to determine the operative's vision.

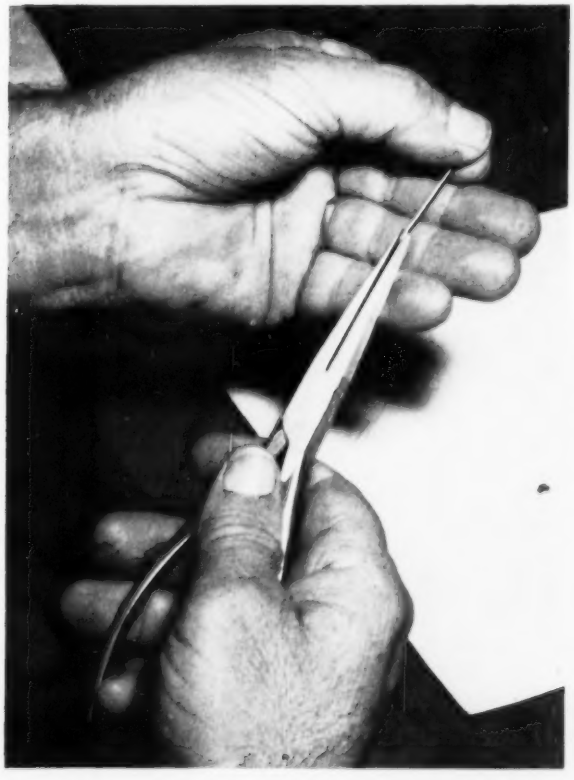
The correct step-by-step procedure for straightening needles is shown in the photos here and on p. 161. Long usage has proved that this method gives fast and efficient results, if the operative is properly instructed. Needle handling is minimized by eliminating as many position changes as possible.

3 Straighten the front of the needle with the thumb, supporting the needle with the pliers and forefinger. For firm support, contact should always be maintained between opposite hand or both hands. Needle is still held by butt with the pliers.

4 Correct position for straightening the side of the needle. To bend the needle in the opposite direction, the fingers are inverted. Operative will again return to position 1 after this step to inspect for progress of the straightening operation.



5 To close beard, hold needle butt between thumb and forefinger of opposite hand, with pliers resting on little finger.



6 To open beard, proceed as in position 5, except that pliers are used as shown to open the beard of the needle.

THIS NEW AUTOMATIC TENSION DEVICE*

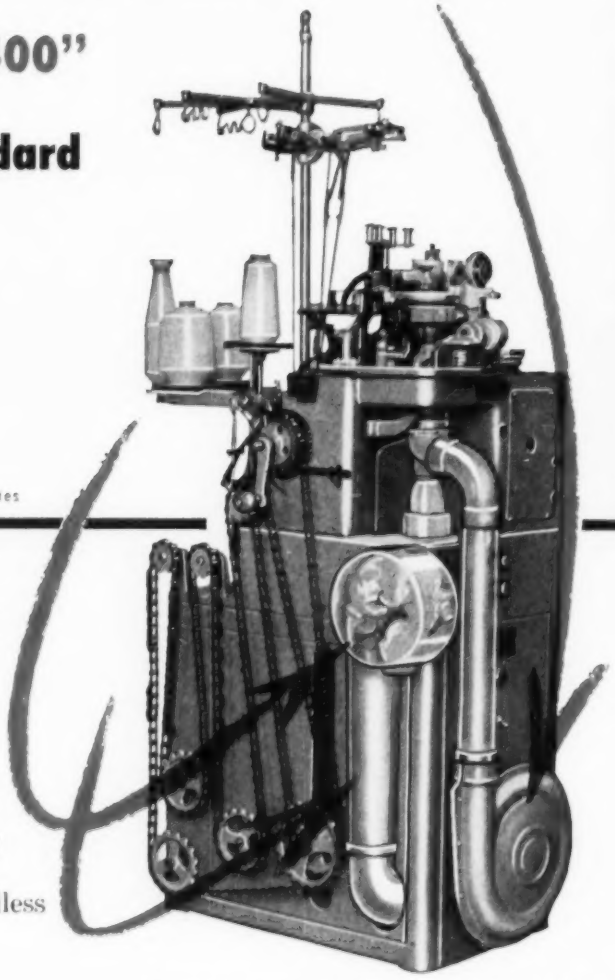
on the FIDELITY "400"

Sets the New Standard

in Seamfree

Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary new Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated—no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

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SOUTHERN SALES OFFICE: 607 PROVIDENT BUILDING, CHATTANOOGA, TENNESSEE

Straightening F-F Needles *(from page 159)*

7 To increase crook of beard, needle and pliers are held as in No. 5, except that pliers are used as shown to increase crook.

8 To decrease crook of beard, proceed as in No. 7, except that pliers are used with stroking action to decrease the crook.

9 Straightening beard in relation to body of needle. Inverted position is used to bend beard in opposite direction. This is accomplished with a stroking motion of the pliers.

10 Position for aligning beard with groove and butt, by bending to left or right as required. Keep pliers in line with body of needle while small part of body is twisted.

Increase Roving Bobbin Capacity up to 37%

WITH *NEW* SACO-LOWELL

12"x7" EXTRA RUGGED FLYERS

AND

IMPROVED JUMBO CONE ASSEMBLY

The new Flyer is strong enough to make a 12" x 7" package on standard 12" x 6" roving frames without decreasing speed or changing other standard parts. It will run without distortion at speeds up to 735 rpm. In many cases, this new flyer permits the building of a bobbin holding 60 to 62 ounces of roving, which amounts to a 37% increase in bobbin capacity. The cost of equipping standard roving frames with these new 12" x 7" flyers is so reasonable that they pay for themselves in a comparatively short period of time.

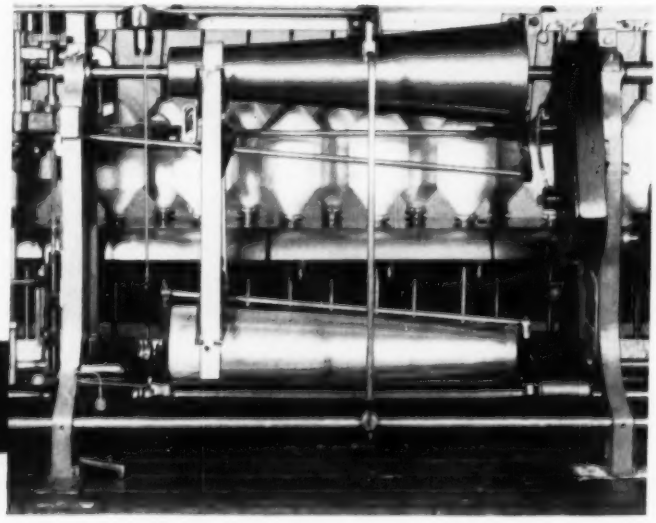
Jumbo Cone

The need for additional power to drive long, large package roving frames has been solved by Saco-Lowell engineers increasing cone speed 33% and cone size 50%. The new Jumbo Cone assembly provides a driving element with sufficient power capacity to drive these frames at a very high percentage of efficiency. The new aluminum bottom cone which is also included in the assembly reduces belt slippage to a minimum.

Obtain

- √ Higher Efficiency
- √ Less Creeling in Spinning Room
- √ Less Re-Workable Waste
- √ Less Piecing

It all adds up to Increased Productivity per man hour!



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60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

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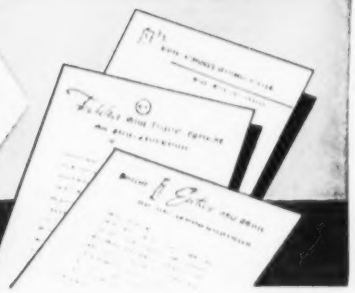
HOW OTHER MEN MANAGE



• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

How to simplify weaving production orders

EDITOR TEXTILE INDUSTRIES:

Installation of simplified methods for preparing loom tickets has enabled Klopman mills to eliminate all repetitive manual writing, rubber stamping, and numbering methods.

Before installation of our present method, we used hectograph duplicating equipment to prepare weaving orders, loom changes, order supplements and other paperwork of a similar nature. We also used the hectograph to add variable information to loom or piece-work tickets.

For a period of time before that we had used edge-punched pin-sort cards in combination with hectograph equipment to produce these tickets. Our present system has eliminated these processes with substantial savings in time and material costs.

Our orders are received by teletype from our New York sales office. From one copy of this order we create our loom change instructions and our weaving order. The loom change instructions are handwritten directly to a Multilith Systemat master (see illustration).

Since we duplicate 10 or 12 copies immediately, this provides the necessary lead time for loom changeover while the weaving order is being prepared.

Meanwhile, the weaving order—the basic document from which the weaving will be done—is being typed. This is also a Multilith master.

From the weaving order the warp ticket is written. One part of the duplicated stock warp ticket is used for pay purposes, the other part is attached to each warp for identification through processing.

After checking, proofing, and necessary approvals the weaving order copies are duplicated. We duplicate between 30 and 40 copies of each weaving order—copies going to our New York office, our planning, scheduling, purchasing, and other interested departments, as well as the necessary number of copies to the weave room office.

Basically, the system we are using now for both loom change instructions and weaving orders is similar to that used previously. However, it is important to note that we have been able to realize several really important advantages by changing to Multigraph

NEW KINK CONTEST!

$100 will be awarded the winner

Send your entry now! This contest ends April 15, 1957

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, April 15, 1957.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E. Atlanta 8, Georgia.

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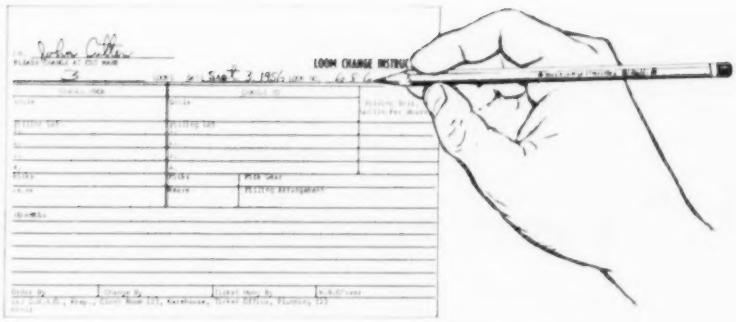
Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1300 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898



Loom change instruction form is preprinted on Multilith master; specific instructions are penciled in; copies are then duplicated. Form is 6" x 8½".

From left to right: 1. Multilith master for loom piece work ticket, 3" x 12", is filled in with a pencil. 2. Copies are duplicated on prepunched and perforated blank yellow card stock. Three series of numbers are automatically added while copies are duplicated. The check marks indicate numbers. 3. Second copy illustrates ascending and descending numbers, which may be in black, blue, red, or green. 4. Third copy, or as many as required, is equally legible. 5. Card stock is preprinted on reverse side with form to record defects in warp, filling, and mechanical operations.

methods. These advantages are:

1. Cleanliness—We have a much cleaner system.

2. Savings in material costs—We found that we were able to realize a 50% savings in the cost of duplicating supplies alone.

3. Savings in personnel—Although initially we had not anticipated that it would be possible to reduce the number of clerical employees, we were able to eliminate one typist immediately and shortly thereafter a second, even though our work load had substantially increased.

From the weaving order we prepare a loom piece work ticket master. This is handwritten.

The number of copies duplicated depends, of course, on the number of cuts for each warp. The cut number which appears on each ticket and stub is printed automatically as a by-product of the duplicating operation. Previously, after loom piece-work tickets had been duplicated via the hectograph process, it had been necessary to hand-write or hand-stamp the cut number on each individual ticket as a completely separate operation. This was not only costly, but was time consuming. Now a numbering attachment on the Multilith offset duplicator numbers each piece-work ticket as it is being duplicated.

This feature alone gave us a saving of between 3 and 4 manhours a day in the ticket office and our material savings were even more impressive.

In checking into the cost of the Multilith Offset Process versus the hectograph spirit system we found that under the spirit method our piece-work tickets were costing us $5.50 per thousand with the preprinting required on the reverse side. With Multilith equipment our present piece-work tickets cost us $1.80 per thousand including our own preprinting. And since we use between 600 and 800 thousand tickets per year, this alone results in a sizable saving. In addition to this cost the masters for the spirit process at the time we discontinued it in the early part of 1954 were costing us 2¢ each versus a cost of Multilith masters of less than 1¢ each.

H. M. ARTHUR
Klopman Mills, Inc.

HOW OTHER MEN MANAGE

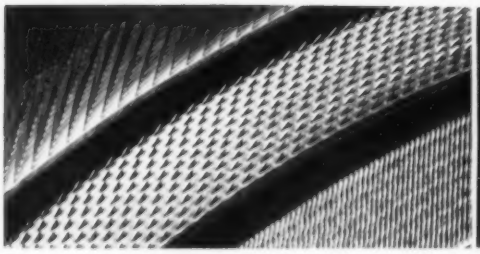
Control pull threads in F-F stockings

EDITOR TEXTILE INDUSTRIES:

With the introduction of finer yarns and double yarn construction, pulled threads are more frequent in full-fashioned production. Regardless of trough solutions used and methods used, pull threads continue to be a big item in quality control in the grey operation.

We have found a need for a program whereby all persons handling goods, from the knitters through the inspectors, can be constantly reminded of pull threads. Even with most of our production being two-thread, and involving ten and seven denier, we have kept our pull threads at or below 1%.

First we have the inspector turn over to the utility girl all large lots of pull threads. The utility girl plots these pulls on a form showing a leg blank and the position of the pull in the stocking. If the stocking were pulled before steaming, it is marked on the blank with



CARDER'S CORNER by Ashworth

CARDERS!! The purpose of this page is to serve as an open forum each month. If you have problems which you would like to throw open for discussion or if you have further comments on problems already presented, write to CARDER'S CORNER, ASHWORTH BROS., INC., Fall River, Mass.

Volume I, Number 1

"PILLS" or "SNOWBALLS"

"Apparently modern picking and ginning methods, combined with the fewer doublings characteristic of today's yarn manufacture, have introduced a greater number of "pills" or "snowballs" than we formerly experienced." Mill #1

"Pills" or "snowballs" are not uncommon and the important thing is to check carefully the points where your equipment may produce "snowballs".

In beginning the search, jot down the things which can cause snowballs such as:

1. Bad card selvages
2. Bent licker-in wire, especially at the selvages
3. Nicks or rough spots on mote knives and plates
4. Screen too close to cylinder at doffer end
5. Fillet not covering enough of the cylinder shell at the edges
6. Bent plates
7. Bad leather seals on picker screens
8. Burred calendar cheeks
9. Guide plates too wide on picker
10. Dirty pickers and cards

With the above in mind, proceed as follows:

Narrow your lap guides on the cards to pull the edges of the lap in and away from the outer edges of the clothing. Repair all clothing which will not respond to this adjustment. Leave no more than ⅛" of cylinder metal exposed at the foundation edges.

Set the nose of the doffer screen ¼" away from the cylinder at the doffer end. Straighten all licker-in wire. Smooth up all metal surfaces which would pick at the cotton-feed rolls on cards and pickers are often overlooked. Straighten all plates, repair all screen leather, set guide plates to produce a lap 38" wide, and line up the outer edges of the doffer with the outer edges of the cylinder. You may even pull all mote knives and polish them. This treatment may appear too exhaustive at first glance — but once it is done you should find a minimum of snowballing.

In cleaning the cards and pickers, be sure to wash away all gums, oil, etc., and continue to keep such accumulations washed away.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
Los Angeles‡ (E. G. Paules)

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3 Factories • 6 Repair Shops • 7 Sales Offices

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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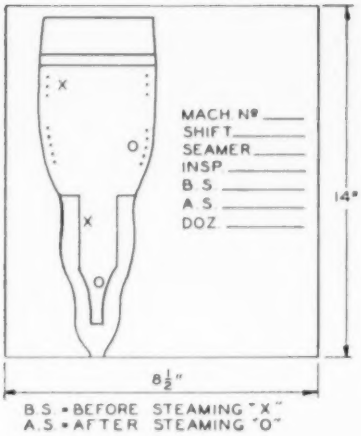
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 SALES OFFICES



an X; if the stocking is pulled after steaming, it is plotted with an O.

The supervisors in the knitting and grey departments are given a copy of this sheet with the following information on it: knitter number and shift; seamer number; inspector number; and the number of dozens in the lot. The supervisor then follows up with the individuals concerned and checks for rough hands, rough places on the machine, and the work cabinet.

All employees know that their work is checked in this manner and they try hard to do a good job on pulls without having to be reminded to do so.

See the accompanying sketch of the chart used.

CONTRIBUTOR No. 8942

HOW OTHER MEN MANAGE

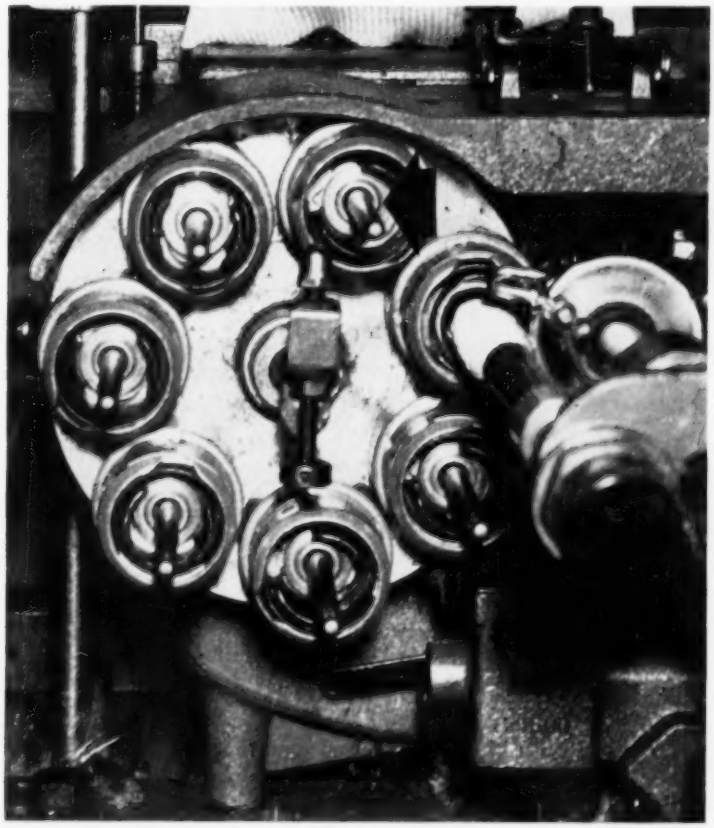
How one mill increased quill life

EDITOR TEXTILE INDUSTRIES:

We had some trouble with vibrating quills on our Scharer quiller which caused ridges to appear on the packages as they were being wound. The holes in the butts of some of our quills had worn oversize and would not fit the spindle snugly.

We corrected the vibration by turning a ⅛" shoulder on the bases of our spindles. The shoulder allows us to get increased life from all our quills.

CONTRIBUTOR No. 8883



Don't tape winder pulleys to change wind ratio

Make-shift repairs or changes to winding machines can sometimes get a mill into difficulty. Such alterations are usually made when there is an immediate need, but the proper parts are not on hand.

While these home-made remedies may solve a momentarily pressing problem, as often as not they create another to take its place. Their greatest failing is that they neglect to take into account design features of the machine, other than the one they intend to change.

For example, one mill had some No. 50 winders equipped with a belt gainer mechanism. Management wanted to change the wind ratio to get an afterwind. Normally, this is done by adjusting the wind pulley, but in this case the required change was too great and a new pulley was required.

The mill didn't have the pulley on hand, so the expedient followed was to tape the rim of the wind pulley to increase its circumference.

The required ratio was obtained in this way, but it was soon discovered that very poorly formed packages were being wound. Something was wrong with the yarn lay.

What had happened? The tape, not having a hard machined surface like the metal pulley, compressed more at some points around the pulley than at others, which caused the diameter to vary.

The variation was so great that

SI

". . . boss told Si to put more of himself into his work. ."

Almost anyone can sell a drum of stuff here and a drum of stuff there, but staying in business 52 years meant repeat orders. Repeat orders meant satisfaction and service, and service meant putting ourselves into our work.

When you buy Seyco, you get more than a drum. You get the combined experience of all of us. Call the Seyco man when you want all of us to put ourselves into your work.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

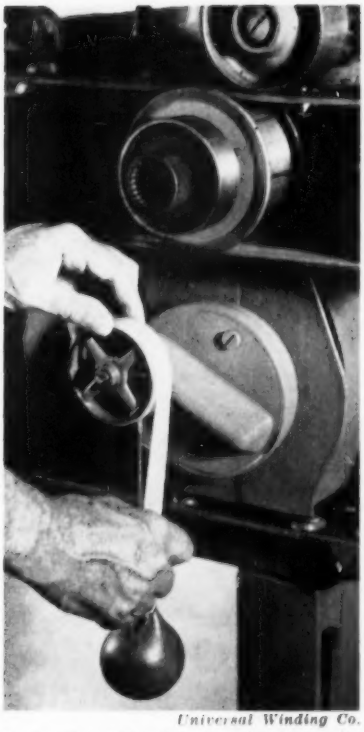
Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

SEYCO

748 RICE STREET, ATLANTA, GEORGIA



Universal Winding Co.

Taping the wind pulley on a No. 50 winder to get a different wind ratio can lead to winding difficulties if the tape doesn't remain concentric. A better way is to obtain the correct size pulley.

adjacent coils of yarn were wound too far apart at one point on the package, while at another point they were piled on top of each other.

The net result was a lot of wasted yarn and eventual purchase of the pulley which should have been bought in the first place.

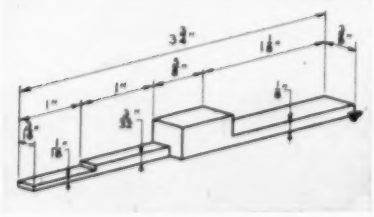
Loom setting gauge

EDITOR TEXTILE INDUSTRIES:

A good running weave room will have looms set by gauges. A good gauge to use and so small you can carry in your pocket is made of $\frac{3}{8}$ inch key stock, $3\frac{3}{4}$ inches long. This small gauge (details in accompanying sketch) may be used for making more than 30 settings on the X-2 model loom.

A few things that come up in every day fixing that can be set by this gauge are: (1) shuttle boxes; (2) dagger fingers to binder; (3) filling forks; (4) filling fork hook; (5) filling feelers; (6) filling feeler latch; (7) transfer hammer on change; (8) depth of temples; (9) height of dagger stop; (10) timing of Stafford knife early or late.

CONTRIBUTOR NO. 8922



HOW OTHER MEN MANAGE

Packaged drive helps finisher boost production

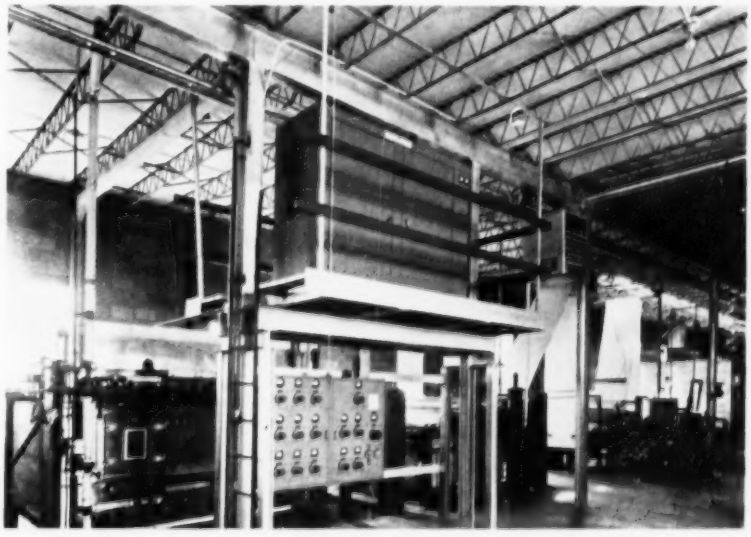
A continuous dyeing range powered and controlled by a "Speed Variator" packaged drive, is reported to have tripled production at Timberline Fabrics Company, Denver, Colorado, and cut consumption of water used in the operation by approximately 85 per cent.

The company processes grey goods brought in from eastern mills. By use of the new system, the entire process — including scouring, dyeing, fixing, sizing, and drying — is accomplished on a one-line operation. Line speed is controlled by the Speed Variator. Because of continuous feeding and removal of the finished fabric, it is unnecessary to stop the machinery to change rolls.

Manufactured by General Electric Co., the Speed Variator provides direct current from an a-c power source through use of a motor-generator set. The packaged drive also includes necessary control.

Officials of the wet processing plant said that water consumption was formerly one to one-and-a-half million gallons a month, but that with the new equipment this has been cut to about 200,000 gallons monthly.

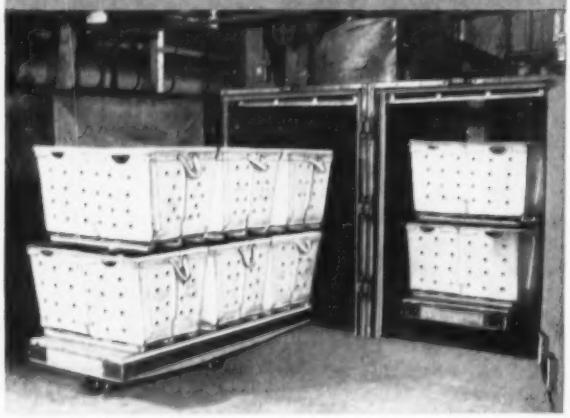
They said the Speed Variator provides simplified connections, saves valuable space by being mounted above the floor, and assures control of the operation.



View of continuous dyeing range at Timberline Fabrics Co., showing the Speed Variator in cabinet on mezzanine and control board directly below.

for the best in CANVAS Steaming and Conditioning Baskets

LOOK FOR **Lane**



Designed especially for yarn conditioning, this economical Lane Style 34 Steaming and Conditioning Basket incorporates *all* these quality features for *long, dependable service at extremely low cost:*

- Special extra heavy Lane duck body for extra long wear.
- Light-weight, extra-strong, rust-resistant spring-steel frame with sturdy, hardwood bottom *double* riveted with non-rusting rivets.
- Rust-proof eyelets on all sides allow thorough efficient conditioning.
- Reinforced, rivet-fastened handles for safe moving.

STANDARD SIZES AVAILABLE

No.	Long	Wide	Deep
1½	18"	14"	12 "
2	22"	14"	14 "
2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there's only *one* Lane. *Always* look for the *Lane* mark—*to be sure!* Call for our representative. He's a specialist in adapting Lane baskets to your material handling problem. Write today.

Canvas Basket Craftsmen Since 1894

Lane

THE LANE BASKET

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M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

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NEW EQUIPMENT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

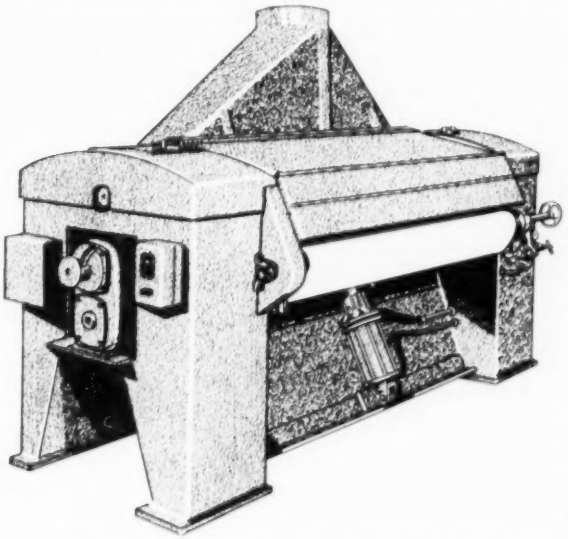
Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors

Machine finishes fur-like high-pile fabrics

A machine for the finishing of fur-like high pile fabrics which are either knitted or woven, the Electro-Finisher, is used to raise the pile of the fabric and impart the fur-like characteristics desired for women's coats, linings for jackets, gloves, galoshes, etc.; sweaters, collars for jackets, draperies and bedspreads.

While used principally on high-pile blends of Orlon and Dynel at present, it may be used with other long-hair or pile fabrics.

The finisher consists of an electrically-heated cylinder,



controlled by instruments so that a constant preset heat is maintained. The cylinder has special grooves that separate and straighten the fibers and give the fabric a fur-like hand.

Turbo Machine Co., Lansdale, Pa.

Do you want more data? Write ◆ or use card on page 187; list A-101

Full protection for motors driving cards

A controller designed specifically for the control of individually driven cotton cards is available. Coupled with overload protection to match the specific characteristics of the special motors used on card drives, are long time-lag heater coils for complete motor protection during running or jogging, and for the longer time required to bring high inertia loads up to speed.

Rated at 5hp-220V and 7½hp-440V, the textile controller's cover mounted, drum-type reversing switch provides reverse operation for grinding cards and is electrically interlocked with a three-pole magnetic contactor so that accidental reversing is impossible in forward drive.

Cutler-Hammer, Inc., North 12th Street, Milwaukee, Wis.

Do you want more data? Write ◆ or use card on page 187; list A-102

Electronic edge guide handles many webs

An answer to runout of continuously processed material and elimination of edge waste is offered by the new "Linar" Edgetrol Photoelectronic Edge Guidance System. Completely self-contained, the equipment is fully automatic. Seven sensing heads provide a variety of models enabling complete system operation with any material under any condition.

Since edge detection is by photoelectric means, no force or pressure is applied to the material under control. This solves the problem of errors which might occur due to side motion of light or loose material.

Used for accurate printing, coating, tubing and rerolling, slitting and punching, tentering, intersheeting, and manifolding, this system successfully controls edge registration and web position of all opaque materials, porous materials such as lace, gauze, screening, netting and non-woven fabrics, and single thickness films such as polyethylene, vinyl and cellophane, and laminates.

Capable of maintaining control accuracies within 1/32" at any speed, the systems are available in three integrated forms for use with present web control equipment as well as in new applications where edge control has previously been impossible.

Intercontinental Dynamics Corp., 170 Coolidge Ave., Englewood, N. J.

Do you want more data? Write ◆ or use card on page 187; list A-103

Range for continuous dyeing of corduroys

A new dyeing range for the continuous pad-steam dyeing of corduroys and velveteens features high speed dyeing with vat, naphthol, sulfur, and acid dyes.

The range includes: two padders; a stainless steel steamer having automatic cloth tension control; an eight-section all-stainless steel neutralizing, soaping, and wash-

ing section; stainless steel dry cans having V-belt drives; and a folder.

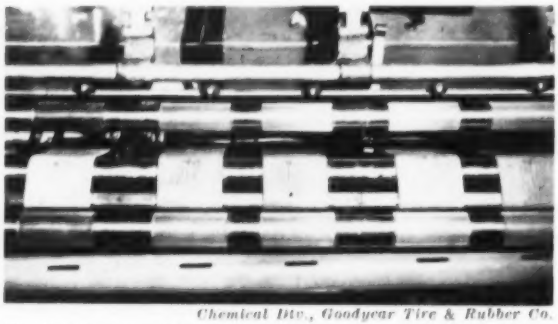
The equipment is also adaptable for dyeing other fabrics such as twills, drills, broadcloths, flannels, etc.

Cook-P&N Machine Co., 365 Dorchester Ave., Boston 27, Mass.

Do you want more data? Write ◂ or use card on page 187; list A-104

High draft aprons have life expectancy of 5 years

Savings may be effected in high draft roving and spinning operations through the use of leather aprons im-



Chemical Div., Goodyear Tire & Rubber Co.

"Tru-Draft" aprons installed on spinning frame equipped with Duo-Roth drafting system.

pregnated with Chemigum latex, a butadiene acrylonitrile copolymer.

The latex imparts increased resistance to abrasive wear and provides a tough surface on the leather. An internal cushioning effect also results from the impregnating characteristics of the latex. The wear and cushioning qualities of the aprons prevent loss of thickness in the traverse area.

For use in drafting both natural and synthetic fibers, these "Tru-Draft" aprons provide cleaner running conditions in the drafting area of the frame and surface cracking is eliminated. They exert a light controlling grip on the fibers and assist in producing a more even drawing action which results in stronger and more uniform yarns.

In one mill where these aprons had been used for two years on spinning frames equipped with Duo-Roth drafting elements utilizing 67 pounds of weight for making filling yarns and 72 pounds for warp, their thickness was only .001" less than it was originally. Therefore, it is estimated that these aprons will be satisfactory for use for about five years.

Greenwood Leather Co., P. O. Box 2623, Greenwood, S. C.

Do you want more data? Write ◂ or use card on page 187; list A-105

Colloid mill features removable design

A new two-stage colloid mill for the emulsification and dispersion of chemicals, waxes, dyes, etc., features a special design incorporating removable rotor, stator, and rotary shaft seal to simplify operating, speed changeover, and cleaning, and to eliminate shaft leakage.

Designated the Gaulin RE Mill, it also offers these advantages: increased efficiency with less horsepower, selec-

There's only one basic reason for preferring

They produce better fabrics at less cost

Actually, of course, there are many reasons for the superiority of Eclipse Bobbin Holders. Easy installation, reduced maintenance requirements (resulting in substantial savings in labor costs), resistance to rust, durability (some holders in operation for more than ten years) and many, many more. Put them all together, though, and they add up to one basic fact: with Eclipse, you get *better fabrics at lower cost.* And what better reason could there be for the amazing sales increase Eclipse has enjoyed in the past year. The textile industry has discovered that the use of old-fashioned wooden skewers is inefficient and costly. The modern way to spin yarn is with Eclipse Bobbin Holders. Our increased plant capacity now assures you of prompt delivery. Write or call Eclipse Machine Division today.

ECLIPSE MACHINE DIVISION ELMIRA NEW YORK Bendix AVIATION CORPORATION

tion of special materials for rotor and stator, including stainless steel, stellite, and chrome carbide; and complete interchangeability of rotor and stator for extreme processing versatility.

Water jacketed, the mill has a rotor speed of 10,000 peripheral feet per minute, and is designed so that the entire unit can be inspected, cleaned, parts replaced, and reassembled in minutes. The two-stage design also provides a micrometer gap setting which is adjustable while running.

Manton-Gaulin Mfg. Co., Inc., Industrial Div., 44 Garden St., Everett 49, Mass.

Do you want more data? Write ◆ or use card on page 187; list A-106

Reduce sliver stretch at card coiler

Sliver stretch across the coiler head of the card is minimized by a plastic roller which is mounted on a simple bracket secured to the coiler head—only one hole need be drilled in the head to receive the mounting screw. The plastic roll contains a low-torque bearing and turns by the drag from the sliver as it is drawn from the doffer into the can.

Engineered Plastics, Inc., Gibsonville, N. C.

Do you want more data? Write ◆ or use card on page 187; list A-107

Improved J-box reduces seconds

J-boxes used for storage-in-process following desize, acid, and bleaching operations in continuous rope and open width ranges contain special gates to prevent tangling as the goods are loaded into the boxes, and a design in the exit section of the box which eliminates "snatch" as the goods are withdrawn from it.

The gate, by permitting untangled loading, allows the cloth to be removed without damage and downtime. By the same token of eliminating the snatch caused by tightly packed cloth in the box, the incidence of frayed and distorted cloth is lowered.

Cook-P&N Machine Co., 365 Dorchester Ave., Boston 27, Mass.

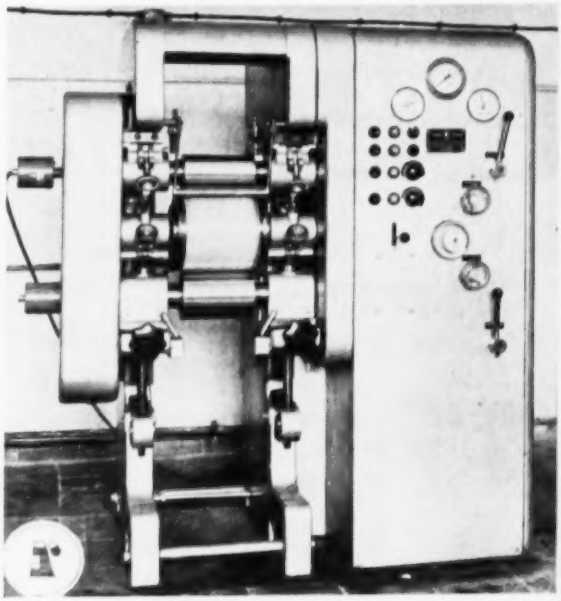
Do you want more data? Write ◆ or use card on page 187; list A-108

Lab calender simulates plant conditions

A laboratory calender, developed by Dr. Ramisch & Co., Germany, makes it possible to prepare systematically the recipes and the actual working conditions, as far as pressure, heat, friction, etc., are concerned, in the plant laboratory, with a minimum of expense for materials.

Practically any calendering operation can be obtained on the machine. Once the proper chemical and physical procedure has been fully established in the laboratory, the production machinery can be set up accordingly.

The calender may be used as: a normal rolling and ironing calender; a friction calender with friction between 0 and 300%; a silk finishing calender, whereby the two



upper rollers are exchanged with a set of rollers for this particular finish, consisting of an engraved steel roller working against a cotton roller; and an embossing calender with an engraved steel roller working against a compressed paper roller. By the purchase of additional rollers the machine can be quickly converted for transparent embossing and Ciré-Figuré finishes.

Among the technical highlights of the machine are: hydraulic operation with variable adjustable pressure from 0 to 13,000 lb; variable stepless speed drive from 3.5 to 20 ypm; stepless variable friction from 0 to 300% without change gears; electrically heated rollers with

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Cotton Waste Fibres

for Felting, Batting, Wadding

for Shipment from New England and Southern mill points

Uniform as to grade, staple, color and character. Free from variations in quality of lot to lot shipments. Available from stock in any quantity at all times.

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3240 Peachtree Road, N.E., Atlanta, Georgia

Mill and Main Office:

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New Sims reverse dished head
HIGH PRESSURE
SLASHER CYLINDER

Why jog along using conventional 12-lb. psig. working pressure cylinders in slashers or dryers for printers? Now you can get the new, far more efficient 50-lb. psig. working pressure Sims reverse dished head High Pressure Slasher Cylinders.

You can step up production almost incredibly with the new Sims reverse dished head High Pressure Slasher Cylinders. They can be installed in your present slasher framework, using journals and bearings already there.

Here are ASME Code-stamped cylinders which will carry a load much greater than conventional cylinders. Available in 5', 6' or 7' diameter by 60" through 72" faces. Stainless steel cover with ASTM-A Grade C, flange quality reverse dished heads.

for ECONOMY and QUALITY

Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality.

For custom tailoring of stainless steel, call, wire or write now.

Sims
METAL WORKS
WEST POINT, GA.

Fabricators Since 1928

finely adjustable temperature; simple and easy roller changing.

Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.

Do you want more data? Write ◆ or use card on page 187; list A-109

Compact, light-duty edge guide

An improved edge guide unit is available for light duty service. A space saver, the new model is compact and comprises a self-contained regulator, motor, pump and oil supply which makes it much easier to install.

Askania Regulator Co., 240 East Ontario Street, Chicago 11, Ill.

Do you want more data? Write ◆ or use card on page 187; list A-110

More efficient slubber stop motion easier to maintain

Improvements in the design of Pneumastop, the combination vacuum scavenger and stop motion for roving frames, have been announced. Among them are printed circuit, enclosed relays, and midget industrial tubes which are all mounted on a plug-in base. The scanner unit is equipped with selenium photo cells which stay in balance, automatically.

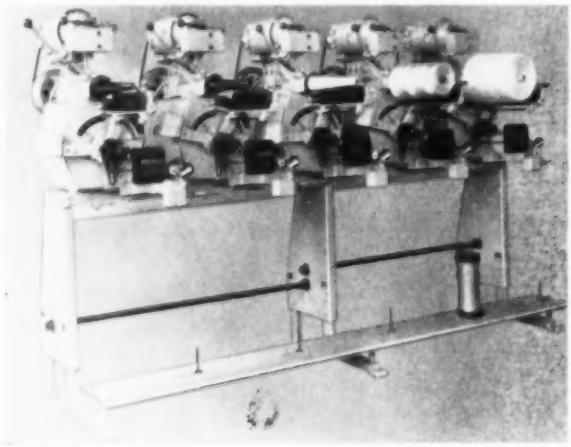
The electronic features are combined with air handling equipment of the latest type to offer an efficient system and to minimize maintenance. Since the amplifier is of the plug-in type, it can be changed by an unskilled operator.

Pneumafil Corp., Charlotte 8, N. C.

Do you want more data? Write ◆ or use card on page 187; list A-111

Winder makes 35-lb packages of coarse yarns

The redesigned, heavy-duty Model 78 winder produces precision-wound tubes or cones of tire cord or coarse cotton, wool, or synthetic yarns. Individually motor driven spindles wind packages weighing up to 35 lb with diameters up to 16".



The control lever has a neutral position which permits free rotation of the package when the operator is tying knots. An electric stop motion and calibrated scale assure accurate and uniform package size.

A heavy-duty belt gainer with convenient hand wheel

adjusts the wind ratio accurately; if desired, the machine may be equipped with positive gear-driven gainer attachments.

It will wind over end from bobbins or from swifts, reels, or an unrolling device, and can be equipped with a torque motor when used as a takeup for yarn being delivered at constant speed.

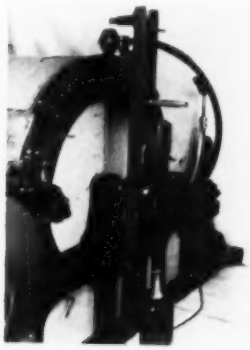
The Model 78 has no idler pulleys and no long drive belts. The heads may be individually serviced without affecting the operation of the balance of the machine. Expansion type tube and cone holders for quick doffing and loading with hand control eliminate loose wrenches, spurs, or splines that could injure the tubes or cones.

Foster Machine Co., Westfield, Mass.

Do you want more data? Write ◆ or use card on page 187; list A-112

Grind card bends in the mill

The flexible bends on cards can be ground in place to accurate concentricity with the Dronsfield's Card Bend Grinding Machine No. 260. The apparatus is mounted on the cylinder shaft, and contains a grinding wheel which does the actual cutting of the bends. A diamond dressing tool is included for dressing the wheel face.



On some makes of cards it is necessary for one set of flat brackets to be cut down to allow the grinding wheel to pass. This set of brackets can be kept with the equipment for servicing other cards of that make. The average grinding time on one bend depends on its initial condition, and varies from ½ hr to 1½ hr. The unit is easily set up and operated.

Dronsfield Brothers, Ltd., Atlas Works, Oldham, England.

Do you want more data? Write ◆ or use card on page 187; list A-113

Oil-in-water printing colors

Supplementing an existing color series called Aridye R 400 (applied in the form of pigmented water-in-oil emulsions), is an improved line of water-dispersible colors called Aquaprint Colors. The latter series is designed for fast-color printing of cottons and synthetics. The colors are applied in the form of pigmented oil-in-water emulsions or in the form of aqueous dispersions. They have good linting qualities and are non-tarnishing.

Providing a wide range of brilliant shades with good fastness to light, washing, crocking, and dry cleaning, the colors are especially suited for printing dress goods, suitings, draperies, curtains, and other types of fabrics requiring a high degree of fastness. Some of the colors provide excellent resistance to caustic cut-out in plisse.

As printed, the colors are final in shade, give sharp marks, smooth blotches, and can be employed alongside Aridye Colors, stabilized azoic dyes, and aniline black in the same pattern to provide color combinations which would be difficult to produce in any other way.

Interchemical Corp., Textile Colors Div., Hawthorne, N. J.

Do you want more data? Write ◆ or use card on page 187; list A-114

work **. . . says "Mark-O-Merit"** ®

moves *faster*

when you use . . .

Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA — W. E. Petway, 2577 East Dansley Dr., North Decatur, Ga., MF 6-3192; FORT WORTH — V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST — Petersen-Daniels, Inc., 3311 Beverly Blvd., Montebello, Calif., RAymond 3-7003. Export Mgr. — R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

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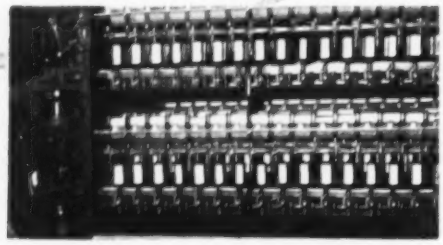

Lapless Endless — Factory made to your size without a lap.

Roll Stock — For splicing endless on your machines. Complete Ton-Tex vulcanizing system available, including portable vulcanizing plate, tools and cements.

Unexcelled Also For Coners and Winders

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31 Columbus Ave., Englewood, New Jersey

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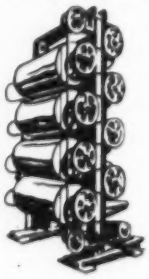


To clean its copper and stainless steel dyed fabrics dryer, one mill was accustomed to use caustic – applied with a cloth on a broom. Only the lowest four "cans" could be washed – the rest proved inaccessible.

Now, by spraying Oakite Composition No. 24 solution with the Oakite Hot-Spray Unit, every "can" is cleaned thoroughly – even the topmost. Traces of dye and bleach are easily, quickly removed – cylinders restored clean as new – solving also the fabrics reject problem.

Ask your nearby Oakite representative for further money-saving details. Write Oakite Products, Inc., 52D Rector Street, New York 6, N. Y.

OAKITE

Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada

Pressure dyeing machine has jig action

A pressure dyeing unit made by Sir James Farmer Norton & Co., Ltd., Manchester, England, uses ordinary jig techniques as far as is possible in dyeing fabrics of nylon and similar fibers. The pressure unit gives darker shades from a given concentration of dye liquor than do ordinary covered dye jigs.

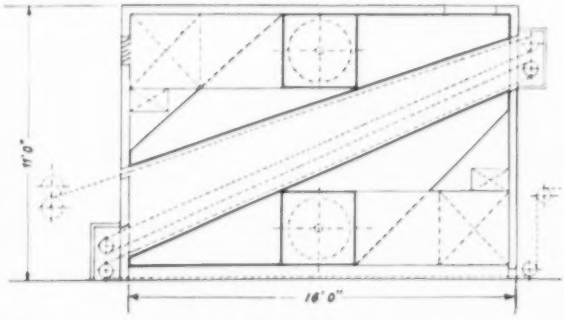
A "quick-opening" door is designed to speed changes of fabric, etc. The unit also permits sampling of the cloth under process as easily as it is done on an ordinary jig. The dye liquor is pump-circulated.

R. J. Dealy & Sons, 263 Summer St., Boston, Mass.

Do you want more data? Write ◆ or use card on page 187; list A-115

Slashing speeded by hot air dryer

All rolls and bearings of the Rebel dryer are located out of the dryer housing which also has access doors to all parts. Steam, gas or oil may be utilized to furnish the heat for the hot-air dryer which in five passes holds over



27 yd of warp. For lighter warps, an optional three-pass unit is available.

With the larger holding capacity, higher temperatures, and greater air circulation, production between 800 and 1600 lb per hour can be expected.

Temperature is controlled up to 600 F in two individually controlled zones to assure dryness before the warp passes over first roll. Up to 95% recirculation of the air adds greater efficiency and fuel savings. Balanced air distribution with controlled volume insure against warp rolling. Models are available for 54" and 60" warps and wider.

J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, N. Y.

Do you want more data? Write ◆ or use card on page 187; list A-116

Carpet yarns solution dyed in heavy deniers

Designed especially for use in production of tufted rugs and carpets, Chromespun and Estron acetate continuous filament yarns are available in 2200, 2700, and 5300 deniers and in twelve selected delustered colors, as well as in 25 bright colors in the regular Chromespun line.

The made-in-color fibers eliminate variations in the color of piece dyes from selvage to selvage. Among the other advantages the yarns offer are: greater resistance to matting and packing in traffic areas; better recovery from pile depression caused by table and chair legs or other furniture; superior resistance to soiling; ease of cleaning without pilling or destroying texture, color, or appearance; no shedding of pile; cleaner, less fuzzy surface makes it more difficult for lint particles to adhere to

the carpet or rug surface, and makes easier cleaning of those that do; ability to obtain with continuous filament yarns, textures identical with those of spun staple yarns; and immunity to rot, mildew, mold, moths, and silverfish.

Eastman Chemical Products, Inc., Subsidiary of Eastman Kodak Co., 260 Madison Ave., New York, N. Y.

Do you want more data? Write ◆ or use card on page 187; list A-117

Double bleaching output, halve floor space

With the Solo-matic bleaching range it is possible to double the bleaching production of multi-stage systems while using half the floor space. The shorter system is available for handling woven goods in either open width or rope form.

In the new arrangement there is a washer, a saturator, a J-box of recent design (see TEXTILE INDUSTRIES for September, 1956, p. 209), and washer units. The preceding washers, caustic saturator, and the caustic J-box of the older system are eliminated.

The saturator of the new system is fed from above with the necessary caustic soda, sodium silicate, and hydrogen peroxide—the ingredients are mixed and metered to this unit.

The names of the domestic manufacturers who have been licensed to build and sell the range are available from

E. I. du Pont de Nemours & Co., Inc., Electrochemicals Dept., Wilmington 98, Del.

Do you want more data? Write ◆ or use card on page 187; list A-118

Lint-free squirrel-cage motor

The Life-Line A lint-free motor is designed to operate in lint-laden air such as is found in opening, picking, etc. The motor is totally enclosed, fan cooled, available in sizes from 1 to 30 hp, operates on 220-440 or 550 volts, 2 or 3 phase, with frequencies of 50 or 60 cycles.

All internal parts are shielded from foreign matter. The operating temperature is kept within proper limits by a ribbed design of the frame which allows free air passage from the fan.

Westinghouse Electric Corp., Motor and Control Div., Buffalo 5, N. Y.

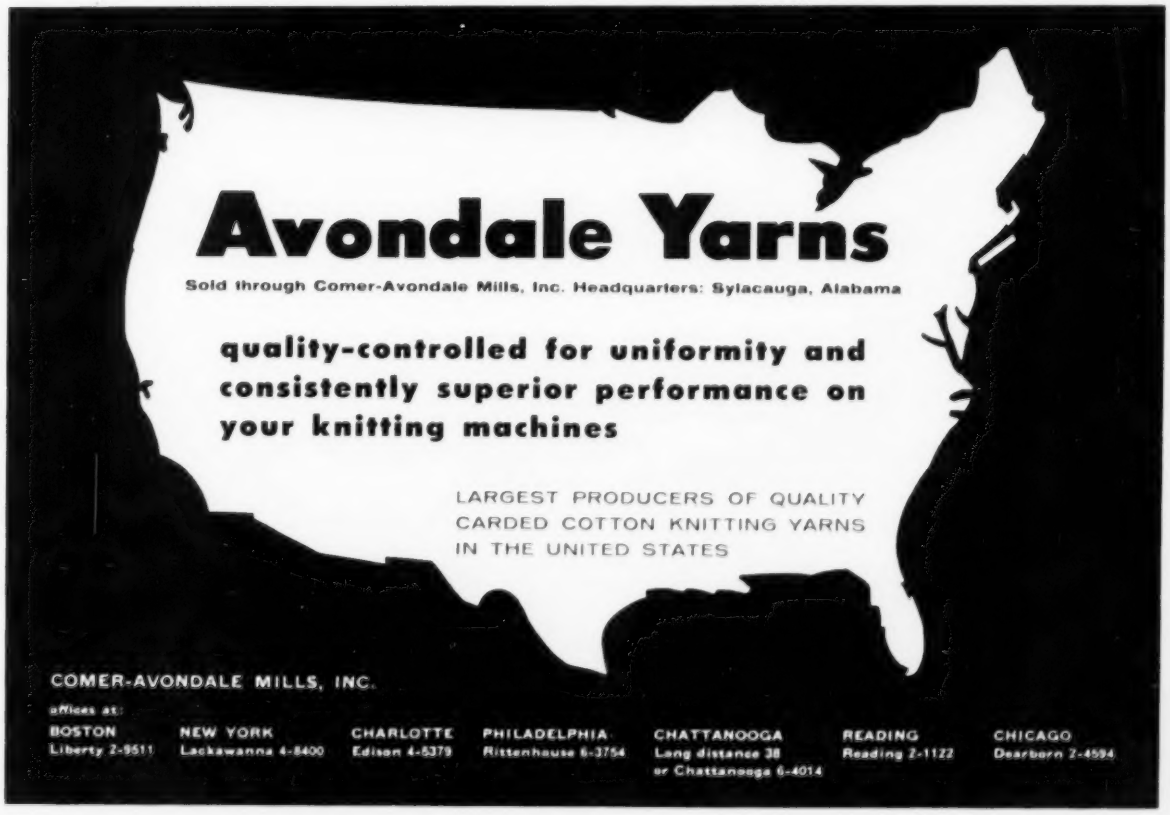
Do you want more data? Write ◆ or use card on page 187; list A-119

Softener for all cotton applications

Emersoft 7700, a high-quality nonionic softener for textile finishing, provides softness at a low cost per yard, and also offers substantial quality advantages for such cottons as broadcloth, twill, denim, and ticking. Its versatility, including its stability over a wide pH range, permits its use in all cotton softening applications.

Emery Industries, Inc., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

Do you want more data? Write ◆ or use card on page 187; list A-120


Avondale Yarns
Sold through Comer-Avondale Mills, Inc. Headquarters: Sylacauga, Alabama
quality-controlled for uniformity and consistently superior performance on your knitting machines
LARGEST PRODUCERS OF QUALITY CARDED COTTON KNITTING YARNS IN THE UNITED STATES
COMER-AVONDALE MILLS, INC.
offices at:
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NEW YORK Lackawanna 4-8400
CHARLOTTE Edison 4-5379
PHILADELPHIA Rittenhouse 6-3754
CHATTANOOGA Long distance 38 or Chattanooga 6-4014
READING Reading 2-1122
CHICAGO Dearborn 2-4594

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WEAR-RESISTING
NYLON

1 2 3

Shift-marker
SPINNING TAPES

AVAILABLE IN 3 WIDTHS: 1/2", 5/8", 3/4"

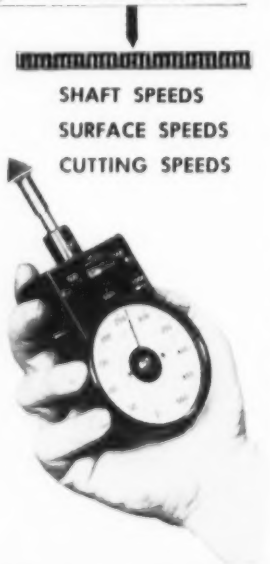
Industry-famous TIGER-TUF Shift-marker Spinning Tapes are now available in long wearing NYLON. These tapes provide the same controlled quality you get with Tiger-Tuf cotton tapes. Coleman supplies bonding strips and bonding machines for joining these new NYLON tapes. Write for details.

COLEMAN COMPANY, INC.
GREENVILLE, SOUTH CAROLINA

SMITHS TACHOMETERS

For Precise and Rapid Measurements of

- **Magnetic Design** Steady readings accurate to ±0.5% at any part of any scale.
- **Instantaneous Reading** No timing or waiting.
- **Self-Powered** Needs no battery. Always ready for immediate use at full accuracy.
- **Nine Ranges** To 50,000 rpm on highest. Interpolate tenths of rpm on lowest.
- **Overspeed Protection** Inherent and built-in.
- **Hold Button** "memorizes" reading when desired.



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CLARENCE J. MARX CO.
Box 4033, Cleveland 23, Ohio

Equipment Briefs

Remove "rubber burns" made by fork lift tires on concrete with Liqui-Det, a detergent which produces copious suds in hard or soft, hot or cold, water. It can be used repeatedly without rinsing and without causing any build-up of film or discoloration. Safe on any type of surface, and pleasant to the hands, it loosens the most common soils in a very short time.

Oakite Products, Inc., 126 C Rector St., New York 6, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A-201

A gun for use with grease cartridges or bulk grease is available in a high pressure, all-steel lever model. Develops 10,000 psi maximum, and handles all normal pressure-gun lubricants in any weather. Has nipple for filling by suction or by filler pump.

Lincoln Engineering Co., 5702-15 Natural Bridge Ave., St. Louis 20, Mo.

Do you want more data? Write Supplier or use card on page 187; list A-202

Fan handles dust-laden air. High mechanical efficiency over a broad range is offered by the Type CR fan with radial blades. It is a high-volume, high-pressure, unit possessing inlet-to-outlet streamlining. For unusually abrasive service, renewable welded-on wearing strips and beads can be provided. Volume controls also are available.

Buffalo Forge Co., Buffalo, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A-203

Towels, pillowcases, etc., are picked up and dropped one at a time in another position by the Sharon Auto-Feed. Articles as small as wash cloths or as large as bath towels are handled easily. The stack of material is kept at a constant level automatically, as the unit removes items from the stack and places them on a conveyor belt, into feed roller, etc.

Sjostrom Machine Co., Boca Raton, Fla.

Do you want more data? Write Supplier or use card on page 187; list A-204

Color or black and white pictures for safety programs, employee photographs, training slides, office procedures, assembly techniques, etc., are easily made by the beginning photographer with a miniature 35-mm camera which has all the exposure data needed built onto the camera or onto the flashholder.

Eastman Kodak Co., Rochester 4, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A-205

Acid and alkali-resistant greases for problem applications in the wet processing plants, etc., offer protection against more than 100 corrosive agents and solvents. Known as the Keystone 5P line, these lubricants also prevent leakage, preserve packings, protect equipment, and lower operating maintenance costs.

Keystone Lubricating Co., 3100 North 21st St., Philadelphia 32, Pa.

Do you want more data? Write Supplier or use card on page 187; list A-206

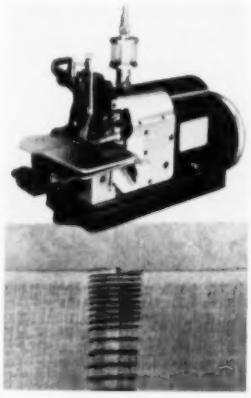
A pilot-type thermostatic controller for higher temperatures is recommended for use where compressed air is the pilot supply. The instruments, called "FulTrol," may be readily employed in control systems for dyeing and bleaching, chemical vats and processes, instantaneous water heaters, etc. Any change in temperature at the thermal element activates a small pilot valve, which in turn varies the pressure applied to a control valve or

other final regulating device.

Fulton Sylphon Div., Robertshaw-Fulton Controls Co., Box 400, Knoxville, Tenn.

Do you want more data? Write Supplier or use card on page 187; list A-207

Waste less cloth by using the Style 60-Y3B butted seaming machine which incorporates the "Y Mechanism" into Style 60-D3B to make possible a butted seam with more stitches per inch at the selvages of the cloth than at the center. This stronger seaming at the selvages helps keep "wrinkle backs" from occurring along the selvages during the processing of the cloth. The width of the butted seam, when opened flat, is approximately $\frac{5}{8}$", and it is easily removed after the cloth has been processed.



The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

Do you want more data? Write Supplier or use card on page 187; list A-208

Chainless mercerizing equipment now available from one manufacturer features improvements in the method of saturating the goods with caustic, chainless stretching, and caustic removal.

Cook-P&N Machine Co., 365 Dorchester Ave., Boston 27, Mass.

Do you want more data? Write Supplier or use card on page 187; list A-209

Sprayer cart speeds floor maintenance. The No. 732 Mobile Pressure Sprayer holds 15 gallons of cleaning agent, or enough to cover 16,000 sq ft of floor space. The operating pressure of 60 lb is easily maintained by a pump lever. The unit will operate 6 minutes and cover 2600 sq ft of floor area on a single pumping. The manufacturer also supplies a cleaning compound under the trade name of Tileze XX which the sprayer was developed to apply.

U. S. Sanitary Specialties Corp., 1001 S. California St., Chicago 2, Ill.

Do you want more data? Write Supplier or use card on page 187; list A-210

A portable pH measuring and recording instrument requiring no external power supply is available for field surveys of stream pollution, waste-treatment plant effluent, and industrial water supplies as well as in-plant studies.

The Bristol Co., Waterbury 20, Conn.

Do you want more data? Write Supplier or use card on page 187; list A-211

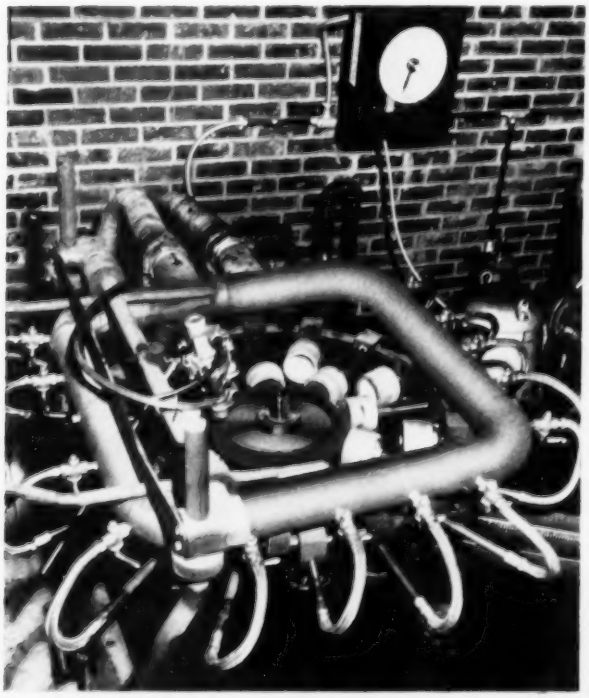
A gear lubricant dispenser, portable and manually operated, incorporates a steel cover which can be clamped in 30 seconds to any standard 25-lb to 50-lb original refinery container. It includes a follower plate to assure positive prime in handling the heaviest gear lubricants, also a 5-foot hose assembly with curved nondrip nozzle for easy application.

Lincoln Engineering Co., 5702-15 Natural Bridge Ave., St. Louis 20, Mo.

Do you want more data? Write Supplier or use card on page 187; list A-212

Two-, four-, six-, or eight-blade fans, depending on the pressure and volume desired, are available in diameters

. . . add YEARS to your GEARS!



★ Now you can have heat-treated steel gears giving FOUR TIMES more life than similar gears which are untreated or poorly treated.

★ The new completely scientific heat-treating installation shown here, assures uniformly hardened gears up to 17" diameter by 6" face. The gear is rotated in electronically controlled radiant heat, thus providing 100% uniformity of treatment from gear to gear as well as from tooth to tooth. Only the web and bore remain soft, insuring a minimum of distortion.

★ Get information or quotation about the Ferguson Gear process that will save you trouble, time and money. Contact your nearest Ferguson Sales Engineer, or write direct to Ferguson Gear Company, Box 511, Gastonia, North Carolina.

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GASTONIA, NORTH CAROLINA • TEL. UN 4-2626

SALES OFFICES: GREENSBORO, N. C. — B. T. GLADDEN; GASTONIA, N. C. — R. W. LYNCH TEL. 2-2662; DENVER, N. C. — HAROLD H. HARRISON TEL. 2-4198; GREENVILLE, S. C.; LA GRANGE, GA. — JOHN FERGUSON TEL. 3048, P. O. BOX 446

MEMBER AMERICAN GEAR MANUFACTURERS ASSOCIATION

from 12" to 72" with certified air-moving capacities of 1200 to 100,000 cfm. The fan blades are designed with hub-tip ratios to enable a more even delivery of air velocity across the entire fan blade, and to eliminate back flow that might occur around the hub.

Chicago Blower Corp., 9863 Pacific Ave., Franklin Park, Ill.

Do you want more data? Write Supplier or use card on page 187; list A-213

A rotating lift truck attachment will permit the truck to double as a standard fork truck and a textile or paper bale handler. Used as a clamp, it can handle bales varying from 27" to 75" in width with either horizontal or vertical placement of the load. Handles pallet loads up to 75" in height with either set of forks.

The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Do you want more data? Write Supplier or use card on page 187; list A-214

Measure the stiffness of felts, carpets, battings, etc., with the Model-X Drape-Flex Stiffness Tester in strip lengths up to 14" and in thicknesses from ⅛" to 2" or more.

Fabric Development Tests, Inc., P. O. Box 45, Brooklyn 32, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A-215

Two new Chromespun colors, Dusk Blue and Dawn Pink, are available, having been designed for the apparel and home furnishings fields. Both are soft, subtle colors.

Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, N. Y.

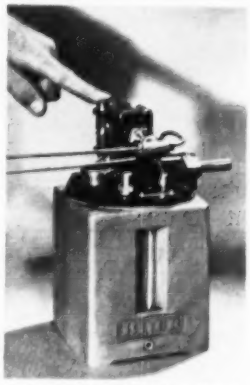
Do you want more data? Write Supplier or use card on page 187; list A-216

A rotary joint, for use with steam, air, water, oil, gas, or alternating hot and cold service, is designated Type C. It is almost universally suited for pressures from 0 to 2000 psi, steam, or to 400 psi, hydraulic; for temperatures to 450 F, or special to 500 F, and for any ordinary rotating speed. The joints have low starting and running torques, even at high pressures.

Barco Mfg. Co., Barrington, Ill.

Do you want more data? Write Supplier or use card on page 187; list A-217

Cyclic and continuous lubrication with one machine.



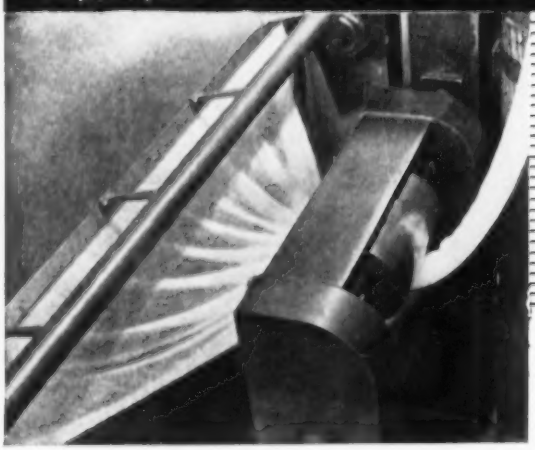
Both cyclic and continuous oil flow to different bearings on the same machine are provided by a lubrication device which combines two systems into one. Two independent gear pumps which are driven by the same drive gear draw oil from a common reservoir and distribute it to the outlet points where it is metered and fed to the bearings. Both systems are adjustable as to flow, pressure, cycle, etc.

Bijur Lubricating Corp., 151 Passaic St., Rochelle Park, N. J.

Do you want more data? Write Supplier or use card on page 187; list A-218

A dustless sodium hydrosulfite, improved Vatrolite, of-

10,000,000 CARDING POINTS NEED PERFECT GRINDING ROLLS



THE CARD-GRINDING SPECIALISTS DRONSFIELD'S

TRAVERSE WHEEL GRINDER No. 120

SOLID GRINDING ROLL No. 112

Sole Agents for Dronsfield's Machinery:—
John Hetherington & Sons, Inc.,
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DRONSFIELD BROTHERS LTD · OLDHAM · ENGLAND

fers many advantages in vat dyeing, stripping colors from cotton and other cellulosic fibers, etc. The compound is free from caking in caustic solutions, dissolves almost instantly, and has a slow decomposition rate. It is equally effective in pad steam, reduced vat, and indigo dyeing, and aids in reducing bronziness in jig dyeing.

Royce Chemical Co., Carlton Hill, N. J.

Do you want more data? Write Supplier or use card on page 187; list A 219

Two new Fortisan-36 rayon yarns of 270 and 300 denier have 280 filaments, with 0.8 Z twist, and are available on 4-lb cones. The yarns are recommended for use in the weaving of scrims for light-weight vinyl laminates, and for reinforcement of ducks, narrow fabrics, webbing, and sewing thread.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A 220

A new steam cleaning unit, weighing only 15 lb, offers single valve control of hot cleaning solution. There are no motors, pumps, or electrical connections—a control cabinet is connected to a ¾" steam line, which under pressure of 40 lb or more supplies the only power required.

Clayton Mfg. Co., El Monte, Calif.

Do you want more data? Write Supplier or use card on page 187; list A 221

Thread for butt seaming fabrics to be carbonized. Heat stretched and bonded (welded) multi-filament monocord nylon thread is suited for butt seaming woolen materials, particularly when the fabric is to be carbonized. Size "D" is recommended for woolens to be carbonized; Size "O" for worsteds. Where extremely high concentrations of acid are employed, coarser sizes are available.

Industrial Thread Corp., New York 3, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A 222

Rugged brakemotors which stop instantly and hold heavy loads are made in a torque range from 3 lb-ft to 345 lb-ft. In the event of power failure or low voltage, "dead man" operation sets and holds the load until normal operation is restored. Available with enclosures suitable for outdoor installation, or where extremely moist, corrosive, or abrasive dust conditions exist.

Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

Do you want more data? Write Supplier or use card on page 187; list A 223

Repair broken metal parts, cracked pipes, jackets, etc., easily and quickly with Devcon, a mixture of 80% steel and 20% plastic. The compound can be drilled, sawed, ground, threaded, and machined. Requires only two hours of hardening time.

Devcon Corp., Danvers, Mass.

Do you want more data? Write Supplier or use card on page 187; list A 224

Rubber-covered dyeing and finishing rolls, custom engineered and available in any diameter and length, can be made to meet almost any requirements of weight, size, and pressure.

Dayton Rubber Co., Dayton, Ohio.

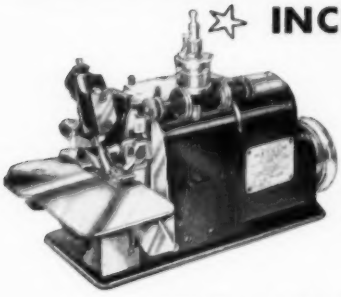
Do you want more data? Write Supplier or use card on page 187; list A 225

A laboratory-type skein and swatch dryer, for drying

NEW EQUIPMENT PARADE

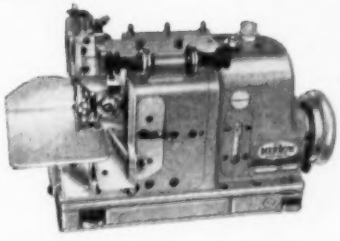
MERROW *OVERSTITCHING MACHINES*

☆ INCREASE PRODUCTION ☆ CUT COSTS



CLASS A MACHINES

Versatile . . . rugged . . . economical. Job-proven performers on a wide range of applications (including shirring).



CLASS M MACHINES

For a variety of overstitching operations where automatic lubrication is desired.

AVAILABLE WITH SEVERAL MODIFICATIONS, BOTH CLASSES OF MERROW OVERSTITCHING MACHINES TURN OUT BETTER PRODUCTS FASTER BECAUSE THEY FEATURE:

- **HIGH PRODUCTION** — Assured by high operating speeds . . . thoroughly tested and *proven* engineering design . . . traditionally rugged Merrow construction.
- **ADAPTABILITY** — Extensive interchangeability of parts permits conversion to a wide variety of operations.
- **QUALITY STITCHING** — Precision thread handling reduces breakage, assures uniformly accurate stitch formation.
- **OPERATOR CONVENIENCE** — Unobstructed visibility of work, ease of operation and accessibility reduce operator fatigue . . . increase output.

We will be glad to demonstrate the work of these machines on your own sample garments or fabric swatches.

TRADE MARK REG

The **MERROW**

MACHINE COMPANY

2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

Fuzzy-Wuzzies on your Frames?

Worn rings cause fuzzy yarn and excessive fly.

• • • Get S-M-O-O-T-H yarn with new DIAMOND FINISH Rings.

WHITINSVILLE (MASS.) SPINNING RING CO.

Makers of Spinning and Twister Rings since 1873

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NEW EQUIPMENT...NEW EDGE-GUIDANCE
***Automation* IN EDGE-GUIDANCE**
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NEW **For TUFTED CARPETING** – Our exclusive original application... edge-guidance device coupled with accurate edge-trimmer.

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NEW **For PLASTICS** – Far superior to any existing edge-guidance on thin gauge materials.

NEW **For TEXTILES** – Only lint-proof device... applies no force or pressure to most delicate fabrics... eliminates all manual control of tubing, rerolling and positioning.

NEW **For LAMINATING** – Application of automation to present-day obsolete manual and mechanical methods.

NEW **EDGETRONICS** ... a photoelectronic approach to edge-guidance... instantaneous response and control with no mechanical time lags... result: equipment guaranteed to be an advance on all existing edge-guidance devices now in operation. Or better still, use EDGETRONICS and our corps of research and development engineers to solve your specific problem.

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INTERCONTINENTAL DYNAMICS CORPORATION
17D COOLIDGE AVENUE • ENGLEWOOD, NEW JERSEY

sample skeins of yarn and swatches of cloth which can be hung over poles or placed on trays, is used principally in dyehouses where it is desired to dry samples under conditions similar to actual production drying. May also be used in research laboratories and textile schools. Direct motor driven fan circulates steam- or electrically-heated air.

Proctor & Schwartz, Inc., 7th St. & Tabor Rd., Philadelphia 20, Pa.

Do you want more data? Write Supplier or use card on page 187; list A 226

A combination stroboscope for optical measurements from 400 to 50,000 rpm with direct reading of the rpm on the tachometer dial is available. The tachometer is easily detachable and can be used as a separate instrument for mechanical measurements from 400 to 50,000 rpm. The instrument can be held in hand, supported by a special chest support, or mounted on a tripod. An attachable reflector for bright illumination is supplied.

EPIC, Inc., 154 Nassau St., New York 38, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A 227

A new solution-dyed acetate yarn, Flare Red C-64, has been added to the Celaperm line of filament yarns. The yarn is a vibrant, basic red which provides necessary brilliance and clarity for many end uses.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A 228

For quick and easy speed adjustment on V-belt drives, "Magi-Key" sheaves are available. Torque is transmitted from hub to disks or from disks to hub through keys. The flexibly-joined set screw and key give a positive lock between the movable disks and the stationary hub.

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

Do you want more data? Write Supplier or use card on page 187; list A 229

Offset swelling of cakes during dyeing by using a spring cake carrier, Radia-Type II/T, which permits penetration of the dyestuff as it compensates for the changing cake form and size. A similar device in the form of a cheese spring is also available—the LETI 4E. The spring tension provided in both models permits unwinding under controlled tension.

R & J Textile Corp., 45 Carlton Ave., Carlton Hill, N. J.

Do you want more data? Write Supplier or use card on page 187; list A 230

A miniature photo-electric system can be used for machinery safeguarding, counting, traffic control, inspection, etc. Without contacting the material or the equipment being controlled, the instruments, called "Robot-Eye," do not sacrifice dependability and sensitivity—they will follow operations up to 600 fpm, and can work from either direct beam, reflection from object, or from mirror reflection. Light and cell unit swivel for ease of installation and alignment.

Standard Instrument Corp., Robot-Eye Photo Control Div., 657 Broadway, New York 12, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A 231

Extremely accurate feeding where relatively small amounts of material are involved, is made possible by a miniature electro-permanent vibratory feeder, the FE ¼. Operating directly off a-c lines, the feeder will operate in

association with packaging and weighing equipment to supply reagents to chemical systems, etc. Feed rate is controllable up to a maximum of 500 lb (sand) per hour.

Eriez Mfg. Co., Erie 6, Pa.

Do you want more data? Write Supplier or use card on page 187; list A-232

A lift truck made for use in dusty atmospheres is protected by special filters, seals, and baffle plates. Oil filters screen the air entering the carburetor and crankcase breather pipe. Generator and the voltage regulator are completely enclosed. A deflector plate under the truck reduces the possibility of foreign matter being drawn from the floor into the gasoline engine compartment.

The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Do you want more data? Write Supplier or use card on page 187; list A-233

A communication system with automatic voice control permits private and selective conversation without the manual operation of any controls. The Series 7700 Talk-A-Phone, in addition to the above, gives automatic traffic control, and automatic monitoring signal, as well as a closed conference without the need for talk-listen control. A companion model, the Series 7600, features automatic touch control as well as automatic traffic control and closed circuit conferences.

Talk-A-Phone Co., 1512 S. Pulaski Rd., Chicago, Ill.

Do you want more data? Write Supplier or use card on page 187; list A-234

Both pallet and palletless handling of loads is accomplished by an electric fork truck with clamping arms which rotate 90 degrees. When used as a fork, pallets as little as 30" may be handled; when used as a clamp, the maximum adjustment is 63¾" between the arms, and the minimum is 16". The arms are lined with rubber, and the clamp itself is equipped with a pressure relief valve to prevent crushing of loads. Available either in rider-type or walkie-type models, the trucks range in capacity from 1000 to 6000 lb.

Lewis-Shepard Products, Inc., Watertown 72, Mass.

Do you want more data? Write Supplier or use card on page 187; list A-235

Floor machine lets one man do work of three. The "Lawlor-ette" floor machine scrubs, flood rinses, picks up, and polishes. Compact and light in weight, and only 17" wide, it can be turned easily in small spaces and narrow aisles. The machine will take care of any kind of floor and operates on a 15-amp fused line of 110 volts, a-c (d-c units are available also).

S. C. Lawlor Co., 124 N. Aberdeen St., Chicago 7, Ill.

Do you want more data? Write Supplier or use card on page 187; list A-236

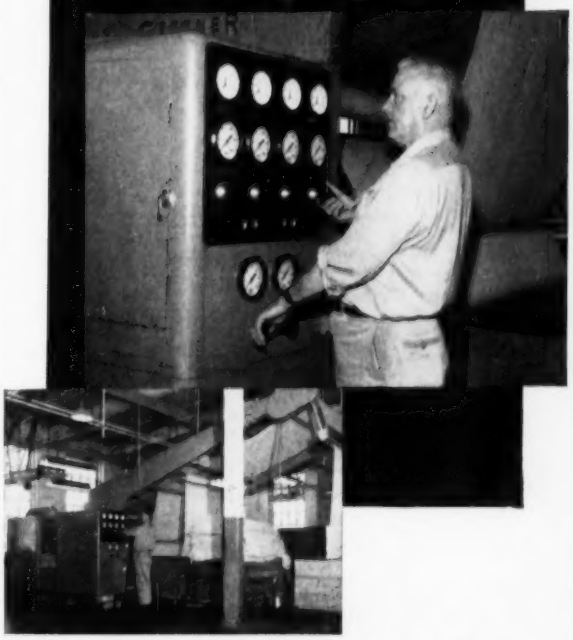
For use with thermosetting resin finishes is Protolube PE, an emulsified polyethylene, which imparts a durable plasticization to the resins that reduces needle cutting and improves crease resistance, abrasion resistance, and tear strength. The compound has excellent resistance to yellowing at high temperatures, and excellent compatability with all catalysts used with thermosetting resins.

Proctor Chemical Co., Inc., Salisbury, N. C.

Do you want more data? Write Supplier or use card on page 187; list A-237

Find tramp metal in textiles moving at speeds up to

The GESSNER Napping Panel *tells you EXACTLY what's going on*



Gessner builds Hi-Torc Nappers as single machines or in tandem. In tandem, these nappers will nap the same side of the cloth, or both sides at the same time. And in tandem, for the first time, the operator knows exactly the napping effect of the second machine simply by watching the panel. The napping performance is indicated accurately and constantly on the panel dials.

Gessner has made possible the control of the cloth tension and the napping effect of both machines from this one panel. No longer do you have to worry about tightness or slackness of the cloth on the rear machine.

The napping effect, once requiring multiple runs on a single machine, can now be produced in ONE Hi-Torc tandem run.

The Hi-Torc Napper has the necessary horsepower to drive both the pile and counterpile rolls on the breaking runs. That's why Hi-Torc cuts down the number of runs — saves you napping time and considerable money.

Simply tell us you would like to see a Hi-Torc Napper in operation. We'll do the rest.

DAVID GESSNER CO.

WORCESTER, MASS.

Canadian Representative: W. J. Westaway, Montreal, Quebec, Hamilton, Ont.

Gessner takes the guesswork out of napping

TREATED APRONS LAST LONGER

MIKE TURNER

covers

SOUTH CAROLINA

for us

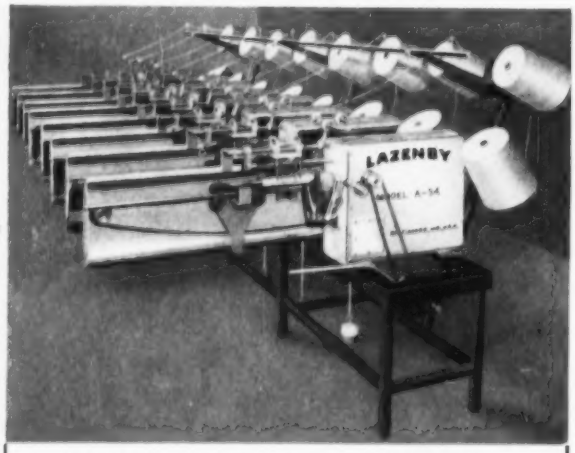
Traveling out of Clinton, S. C., Mike specializes in spinning room items. He travels South Carolina only so as to give his customers good service. When you need something, call Mike at Clinton. If he's not hunting or fishing, he'll come see what you want. He's a good boy. In addition to our tough aprons he has:

Textile Bobbin Works
Marquette Spindles
Hygrolit Machines and conditioning liquids

A quality fellow with quality lines

RUSSELL A. SINGLETON & SONS
Blanco, Texas

P. S. We don't mind his hunting and fishing. After all, he gave up golf.



WIND COPS OF MAXIMUM DIAMETER AND LENGTH

New Automatic Winder by Lazenby, Model A-54, winds cops of maximum yardage from 8" to 22" long and 1 1/8" to 2" in diameter.

labor saving
dial control
quick adjusting
quick changeover
precision manufacture
Timken bearing equipped

SEND FOR DESCRIPTIVE FOLDER

The F. A. LAZENBY Company
3106 Elm Avenue Baltimore 11, Md.

1000 fpm with the Model TM Metal Detector which automatically signals when either ferrous or non-ferrous metals appear. Inspection apertures can be made any convenient size and may be mounted in any position to permit passage of the product to be inspected. Device may also be used to operate a reject gate, trigger, or marking device, as desired.

J. W. Dice Co., Englewood, N. J.

Do you want more data? Write Supplier or use card on page 187; list A-238

Sleeve bearings can be quickly lubricated with Permawick, a combination of oil and cellulose base fibers which will not separate under injection pressure. Regardless of the shape of the sleeve cavity, it is filled automatically and instantly by the Permajector Model M with a metered amount of Permawick in one simple operation. The Permawick offers adequate lubrication for bearings in motors, generators, pumps, pulleys, pillow blocks, blowers, etc.

Fluidwick Co., 5319 East Outer Dr., Detroit 34, Mich.

Do you want more data? Write Supplier or use card on page 187; list A-239

Relief valves and back pressure valves now available accommodate corrosive fluid pressures of 1500 psi and temperatures up to 250 F. The top works of these valves are protected by Kel-F thermoplastic diaphragms. Pressure settings over a wide range are easily made by a screw driver.

Milton Roy Co., 1300 East Mermaid Lane, Philadelphia, Pa.

Do you want more data? Write Supplier or use card on page 187; list A-240

Eliminate sanitation odors. Cifon not only eliminates odors, but also repels flies and mosquitos and prevents their breeding. Applications in garbage disposal dumps, sanitary land fill, sewer sanitation, washing of barges, trucks, and garbage cans, require no special equipment or training. For positive odor control in sewage disposal plants it can be used in the raw sludge storage tank, at grit bar, in sand filter beds, and effluent. Contains no caustic, carbolic acid or free chloride.

Fine Organics, Inc., 211 East Nineteenth Street, New York 3, New York.

Do you want more data? Write Supplier or use card on page 187; list A-241

Solves sewage foam problem. An agent for economical and uniformly good control of foam in sewage aerators, is Foamwilt — a low cost, easy-to-use product that not only kills off foam but inhibits its formation. Requiring no special training or expensive equipment, it is fed with a suitable pump into the aerator at 0.5 to 1 p.p.m. Possessing excellent spreading ability and good "knockdown" of foam in any season or temperature, it will not separate and shows little change in viscosity in temperatures of 0 F to 100 F, assuring the user that pipes and valves will remain free flowing.

Fine Organics, Inc., 211 East Nineteenth Street, New York 3, N. Y.

Do you want more data? Write Supplier or use card on page 187; list A-242

Automatic dry chemical piped fire extinguishing system. A compact, low cost, automatic, dry chemical fire extinguishing system (PS-30) for flammable liquid, electrical, and textile fire hazards can be operated automatically or manually. A piped system, it is intended primarily for the protection of moderately sized hazards such as textile lint. It can be recharged on the spot and put back into service immediately. The unit consists of a 30-lb capacity dry chemical unit installed near the hazard and serving as a storage tank for the dry chemical. A special carbon dioxide gas pressure cartridge

furnishes pressure to expel the dry chemical on the fire through piping connecting the dry chemical unit with the hazard area. Automatic operation is triggered by the melting of a fusible metal link located above the hazard.

Ansul Chemical Co., Marinette, Wis.

Do you want more data? Write Supplier or use card on page 187; list A-243

New books

A general review of the whole field of textile dyeing and finishing is contained in the German language edition of *Technology of Dyeing and Textile Finishing* by Schaeffer. Beginning with a review of the characteristics of natural and synthetic fibers, the author covers briefly the textile manufacturing processes from spinning, slashing, and weaving, to desizing, mercerizing, and finishing, with over a dozen types of finishing considered. Notes on the classes of dyes and variations in the processing of the different dye classes are presented. Published by Melliand Textilberichte, Postbox 181, Heidelberg, Germany.

Available from the Textile Division, American Society for Quality Control, is the 1956 edition of papers pertaining to quality control in the textile industry. Included are 26 papers dealing with the subject, and they range in scope from fibers to fabric. Entitled *Textile Quality Control Papers*, Vol. III, 1956, the 233-page book is priced at $2.50 for members and $5.00 for non-members, according to an announcement by D. S. Hamby of N. C. State College, Raleigh, N. C., who served as technical editor.

The first volume of a series covering the entire field of biological waste treatment, *Aerobic Oxidation*, records the proceedings of the first conference on biological waste treatment. Thirty-three papers cover separate sections: basic biochemical principles underlying biochemical oxidation and their applications in activated sludge and trickling filter processes; basic theory of oxygen transfer and its application to the design of aeration equipment; and the design and operation of typical sewage and industrial waste treatment processes. Available from Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. Price: $10.00.

An enlarged and revised edition of *Commercial Waxes* contains much additional information on waxes, wax blends, and wax-resin compositions. The book covers mineral, vegetable, animal, synthetic, and compounded waxes in detail, giving numerical data on their physical and chemical properties in all cases. Available from The Chemical Publishing Co., Inc., 212 Fifth Ave., New York 10, N. Y. Price: $15.00.

The results of the special conference held by the Finance Division of the American Management Association on April 19-20, 1956, are compiled in a booklet, *Management and Taxes*. The papers which make up the booklet describe how typical companies have organized their tax departments; how these groups are administered; what bearing their work has on management decisions and, as a consequence, net profits. Two other booklets compiled from papers submitted at the Special Manufacturing Conference on March 26-28, 1956, *Company Experiences in Manufacturing Cost Reduction*, and *How to Reduce Production Costs*, have similar interests for management. All are available from American Management Association, 1515 Broadway, Times Square, New York 36, N. Y.

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PRECISION-BUILT PARTS

Get BETTER OPERATION and LONGER SERVICE with

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Card Screens

GASTONIA standard type rib or perforated Card Screens are cut and assembled on specially designed precision-built jigs.

Maximum operating efficiency and utmost durability of these Card Screens is assured by thorough checks at various stages of manufacture. Scientific final inspection guarantees setting points within standard tolerance.

GASTONIA Card Screens, like all other GASTONIA Products, are precision-built from the finest materials by highly skilled workmen having many years of practical experience.

Gastonia TEXTILE SHEET METAL WORKS, INC.
Gastonia, North Carolina

A sheet metal works serving textile mills

CYLINDERS — Dynamically balanced for better performance—reduce vibration to an absolute minimum.

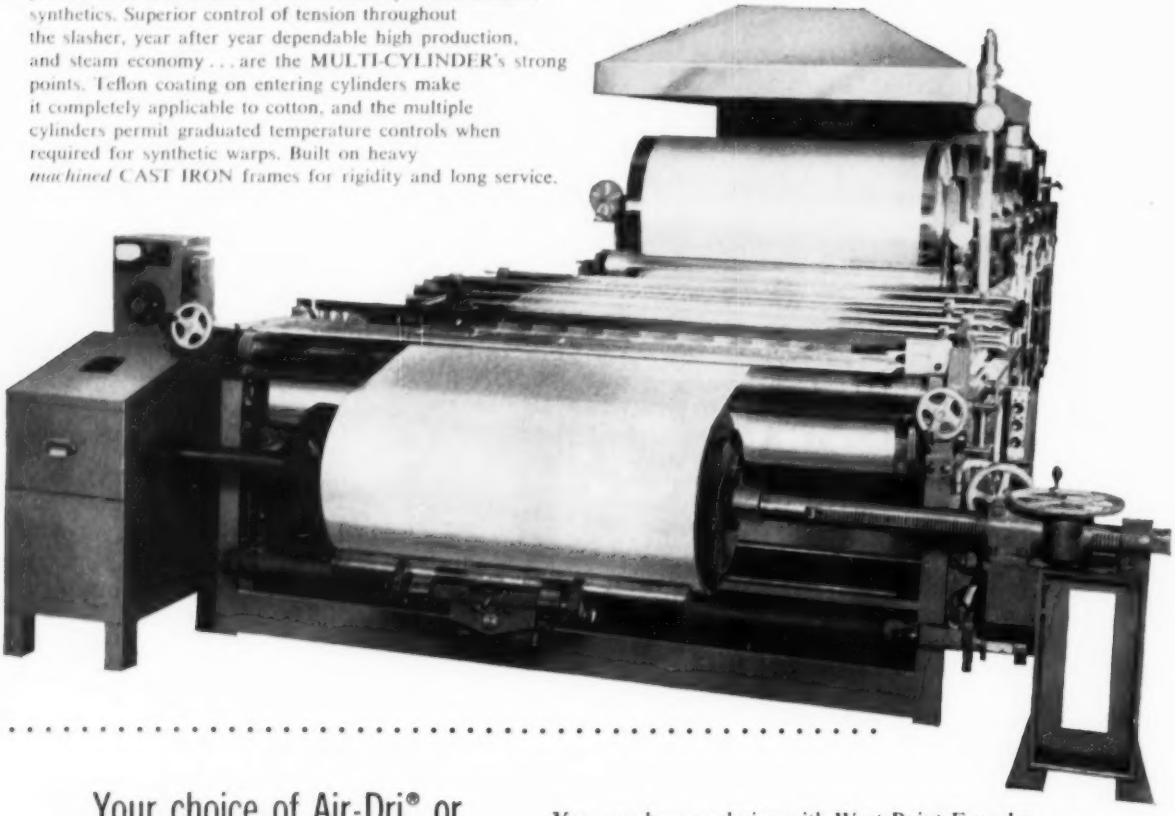
SCREENS — Picker, Condenser and Waste Machine Screens of maximum strength and durability.

ASPIRATORS — Precision manufacturing methods assure proper shape and balance of Aspirators and Aspirator Dampers.

LAP CONDUCTOR TINS
WASTE CHUTE COVERS
WASTE CHUTES
SLIVER PANS
BACK TINS

COMBER RENEEDLING — Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

MULTI-CYLINDER SLASHER—An extremely versatile high-production slasher doing an outstanding job wherever it is installed . . . on cotton, spun and filament synthetics. Superior control of tension throughout the slasher, year after year dependable high production, and steam economy . . . are the MULTI-CYLINDER's strong points. Teflon coating on entering cylinders make it completely applicable to cotton, and the multiple cylinders permit graduated temperature controls when required for synthetic warps. Built on heavy *machined* CAST IRON frames for rigidity and long service.



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WEST POINT FOUNDRY

SLASHERS

Yes, you have a choice with West Point Foundry, because West Point makes *both* MULTI-CYLINDER and AIR-DRI Slashers. And *both* are high producers . . . quality producers. Whether it's a complete slasher installation or modernization of present equipment . . . call West Point Foundry . . . specialists in slashers. They offer you a choice!

AIR DRI® SLASHER—A modern hot air slasher second to none —designed, made *and serviced by* an experienced slasher manufacturer located conveniently in the Textile South. AIR-DRI's insulated enclosure provides a clean and comfortable slasher room . . . for cotton, worsted, and spun synthetic warps. Made with two fans or three fans . . . for either 54½" or 72" warps.

AIR-DRI is a registered trademark of West Point Foundry and Machine Co.

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Use this opportunity to keep abreast of new information dealing with machinery, equipment, supplies and services available to your mill.
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Please send more information on advertisements (give Company Name)

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Name ..... Position .....

Company Name .....

Address .....

City ..... State .....

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TEXTILE INDUSTRIES

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ATLANTA 8, GA.

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HELPFUL BOOKLETS FREE!

1-1 RELIANCE MOTOR SELECTOR. Booklet includes full information on how to select A-C motors for specific application. Highly workable tool for any motor user. Write Reliance Electric and Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

1-2 REFERENCE GUIDE FOR SILICONES. Almost 150 commercially available silicone products are described in catalog, including several developed recently. Emphasis is on charts, tables and graphs. Write Dow Corning Corporation, Midland, Mich.

1-3 NEW ACRYLIC MONOMER. Bulletin gives technical notes on dimethylaminoethyl methacrylate. Physical properties are listed and uses suggested. Write Rohm & Haas Co., Washington Square, Philadelphia, Pa.

1-4 QUICK CLEAN TEXTILE MOTOR. Details given on design changes on Type GZ totally enclosed, fan cooled motor, which provides the textile industry with a rugged, reliable, lint-free motor. Write Allis-Chalmers Mfg. Co., 1126 S. 70th St., Milwaukee, Wis.

1-5 CORROSION RESISTANT EQUIPMENT. Catalog describes synthetic resins as well as glass reinforced polyesters and "Teflon" equipment. Write Haveg Industries, Inc., 900 Greenbank Rd., Wilmington 8, Delaware.

1-6 EVERYTHING FOR FLOOR CARE. 4-page folder describes scrubbing, waxing, polishing and mopping equipment, as well as waxes, sealers and cleansers. Write Finnell Systems, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

17 PICKER APRONS, BEATER LAGS. Booklet gives operational procedure of Smith Textile Apron Co., and shows various products. Modern plant facilities described. Write Smith Textile Apron Co., Inc., P. O. Box 1257, Gastonia, N. C.

1-8 LIGHTING FOR INDUSTRY. Brochure provides general information on new lamp with built-in reflector that increases downward brightness by as much as 60 percent. Eliminates need for external reflectors. Write Sylvania Electric Products, Inc., 1740 Broadway, New York 19, New York.

1-9 FAST EXECUTIVE AIR TRAVEL. Booklet tells how the Aero Commander lifts executives into a new concept of time-travel. Lists advantages and illustrates features of the aircraft. Write Aero Design & Engineering Co., P. O. Box 118, Bethany, Okla.

1-10 CRIMP TWISTING MACHINE. Booklet contains complete details, including pictures of how the Type CSI Twisting machine insures maximum production at minimum cost. Write Ernest Scragg & Sons Limited, Sunderland St. Works, Macclesfield, ENGLAND.

1-11 SWITCHES TO CUT MILL PRODUCTION COSTS. Bulletin describes how Micro Switch precision switches make textile machinery safer, more efficient, more automatic. Write Micro Switch, Division Minneapolis-Honeywill Regulator Co., Freeport, Ill.

1-12 WATER ANALYSIS. Bulletin includes tables of analytic data, conversion factors, a section on preparation or reagents, indicators and standard solutions, etc. Write Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, New York.

110 Cities and Towns with Industrial Corporations to Serve You in

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110 communities with capital totaling $15,180,000 are eager to help you find the best site for your plant, build to your specifications, and lease to you on favorable terms.

104 new and expanded manufacturing facilities, for a total investment of almost $8 million, were added during the first half of 1956 alone, with the assistance of Missouri's unique "Tailor Made" plan.

Locations are available in every part of Missouri. Here you'll have the advantage of a central shipping location, abundant raw materials from farm, mine and forest, plentiful water . . . and a large pool of trained workers with an excellent labor relations record.

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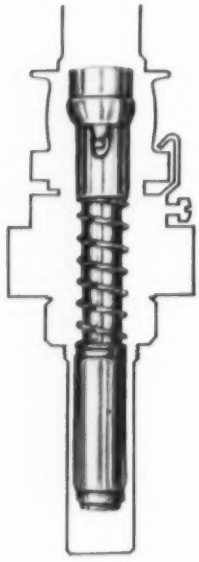

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Precision engineering and meticulous inspection will satisfy the most stringent requirements.
High-grade material ensures long operational life.
The roller and footstep bearings have a faultless alignment.
Swiss workmanship increases the service life of machines and lowers upkeep costs.

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OPENING THROUGH ROVING

R-1 LUMMUS PEPPER-SHAKER OPENER—Booklet tells how the Pepper Shaker is combating the pepper trash inherent in machine-harvested cotton. Complete details and comprehensive photographs.— ALDRICH MACHINE WORKS, P. O. Box 759, Atlanta, Ga.

R-2 STATIC ELIMINATION — Bulletin by Simco describes effective, simple, safe and inexpensive means of eliminating static. — SIMCO COMPANY, 920 Walnut St., Lansdale, Pa.

R-3 CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

R-4 CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. — BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney St., Philadelphia, Pennsylvania.

R-5 VERSA-MATIC DRAWING FRAME — Story on how drafting elements in the Versa-Matic possess a high degree of fiber control so that with 64 doublings it is possible to obtain sliver, roving, and yarn of excellent quality. — SACO-LOWELL SHOPS, 50 Battery march St., Boston, Mass.

R-6 THE SARGENT OPENER — Pamphlet describes opener, with rotary evener and stripper, which is designed for automatic quality production and features rugged construction. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

R-7 BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut away views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

R-8 FEATHERTOUCH DRAFTING — Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost. — IDEAL INDUSTRIES, INC., Bessemer City, N. C.

R-9 AUTOMATIC WEIGHING FEEDERS — New booklet shows how the Dodenhoff Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. Application on nonwovens, carpet yarns, long staple synthetics, woolens and cotton. — W. D. DODENHOFF CO., INC., Box 178, Greenville, S. C.

R-10 SRRL OPENER, SCREW CONVEYORS — Information available on Continental Gin Company's SRRL Opener. Also complete line of screw conveyors and accessories. — CONTINENTAL GIN CO., Birmingham, Ala.

R-11 FLEXIDYNE INDIVIDUAL CARD DRIVE—Booklet describes operating principles and features of Dodge's new Flexidyne Individual card drive. Specifications and prices included. — DODGE MFG. CO., Mishawaka, Indiana.

R-13 TIPS ON CARDING PROCEDURE — Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. — ASHWORTH BROTHERS, Fall River, Mass.

R-14 PNEUMASTOP FOR FLY FRAMES — Brochure explains, in terms of dollars and cents, the benefits of having Pneumastop-equipped roving frames in the mill. Illustrated to show its operation and several different types of installations. — PNEUMAFIL CORP., Charlotte 8, N. C.

R-15 ADVANTAGES OF ALDRICH PICKERS — Fold-out brochure describes various aspects of the Aldrich picker in detail. Comprehensive pictures, good technical text. — ALDRICH MACHINE WORKS, P. O. Box 759, Atlanta, Ga.

R-16 UNIVERSAL CARD COILER — Booklet gives details on the McDonough Universal Card Coiler, enumerating 12 important reasons why its the best available. Dimensions included. — McDONOUGH POWER EQUIPMENT, INC., McDonough, Ga.

R-17 NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices. — BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 COILERS AND CONVERSIONS — New color booklet describes Southern States' new complete coilers and conversions for cards. Features mechanical and operating characteristics with pictures of inside construction. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

R-19 84" WOOLEN CARD — Colored picture of the Davis & Furber 84" woolen card, suitable for mounting. Has floor plan, description, and technical details on reverse side. — DAVIS & FURBER MACHINE CO., North Andover, Mass.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 SPINNING NEWS — Literature in newspaper format gives news on spinning equipment manufactured by Roberts Co. in concise, readable form. — ROBERTS CO., Sanford, N. C.

R-102 PLASTIC BOBBINS — Booklet tells the way in which Engineered Plastic's plastic bobbins improve quality and efficiency in production. — ENGINEERED PLASTICS, INC., Gibsonville, N. C.

R-103 DAYTON PRODUCTS FOR SPINNING AND WEAVING — Illustrated booklet describes natural and synthetic rubber products for textile machinery. Complete line, applications, advantages shown. — DAYTON RUBBER CO., TEXTILE DIV., Dayton, Ohio.

R-105 SPINDLE OIL — Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. — GULF OIL CORPORATION, Gulf Bldg., Pittsburgh, Pa.

R-107 THRU-DRAFT CREELS — Brochure describes the Bentley Tru-Draft Umbrella Creel as easy to install, adaptable to all frames, completely adjustable, etc. — THE BOULIGNY CO., P. O. Box 2115, Charlotte, N. C.

R-108 HIGH SPEED AUTOMATIC QUILLER — Color booklet describes the Schlafhorst "Autoconer" listing its advantages and giving dimensions. — TERRELL MACHINE CO., INC., P. O. Box 928, Charlotte, N. C.

R-109 MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER, INC., Milwaukee, Wis.

R-110 STOP FRAME ON ROVING FAILURE — Adamstop instantly detects all roving failures and stops frame. Booket tells how many installations have increased job assignments as much as 25% to 100%. — ADAMS, INC., 209 East Stone Ave., Greenville, S. C.

R-111 AUTOMATIC COP WINDER — How high production with less labor is secured in the Lazenby Model A-54 Automatic Cop Winder is described in booklet. No slow-down or stopping of the winding spindle for doffing. — F. A. LAZENBY CO., 3106 Elm Ave., Baltimore 11, Md.

R-112 BAHNSON PACKAGED MODERNIZATION—New brochure gives details on Bahnson's complete system, including Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. — BAHNSON CO., Winston-Salem, N. C.

R-113 REINER WARPER — Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog. — ROBERT REINER, INC., Weehawken, N. J.

R-114 CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers. — HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

R-115 PRECISE WIND MACHINE — Form A 92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.

R-116 AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. — AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

R-117 ALUMINUM SECTION BEAMS — Information available on advantages of Hayes beams. Includes prices and delivery schedules. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-118 LUBRICANTS FOR TEXTILES — Working samples available of Ben Boy Bearing Lubricants, Spindle Oils, Non-Melting Oils, Twister Lubricants. — GEORGIA-CAROLINA OIL CO., Box 101, Macon, Ga.

R-119 CUSTOM MADE THREAD GUIDES — Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. — AMERICAN LAVA CORPORATION, Chattanooga 5, Tenn.

R-120 SPINNING FRAME CONVERSIONS — Information available on how to get new frame results and big package economy at half the cost with Meadows Conversions. — MEADOWS MFG. CO., Station A, Atlanta, Ga.

R-121 COLLECTO-VAC — Catalog 30A describes Bahnson's new development, "Collecto-Vac," for collecting lint, fly and broken ends. — THE BAHNSON CO., Winston-Salem, N. C.

R-122 STATIC ELIMINATOR FOR WARPERS - SLASHERS - CREELS — Booklet tells how use of Chapman Static Eliminators will insure increased production, improved quality and reduced waste by complete elimination of static. — THE PORTLAND CO., 22 Fore St., Portland, Maine.

R-123 SPINNING AND TWISTER RINGS — Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures. — WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

R-124 DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

R-125 PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures. — PNEUMAFIL CORPORATION, Charlotte 8, N. C.

R-126 PRECISION GEAR BULLETINS — Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving frames, spinning and twisting, and a general catalog on gears. — PRECISION GEAR & MACHINE CO., 2001 N. Tryon St., Charlotte 2, N. C.

R-127 HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go directly to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

R-128 PNEUMAFIL SUCTION CLEANING SYSTEMS — Booklet describes types of Pneumafil Systems, gives details of new Collector Unit Model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. — PNEUMAFIL CORP., Charlotte 8, N. C.

R-129 FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth flyer and spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. — IDEAL MACHINE SHOPS, Bessemer City, N. C.

R-130 TWISTING MACHINERY — Bulletin gives outstanding features, specifications, facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns. — COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

R-131 AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24-page bulletin describing the American MonoRail Automatic Cleaner for preventing accumulation of lint on coloring, twisting, winding machines. Also for cleaning monitors and card room ceilings. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

R-132 TRAVELING CLEANERS — 4-page bulletin describes the Improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers. — PARKS-CRAMER CO., Fitchburg, Mass.

R-133 LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on "apless endless spinner and coning belting. — TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

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R-134 SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

R-135 WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top to yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

R-136 THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. — NATIONAL RING TRAVELER CO., Pawtucket, R. I.

R-137 TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

R-138 WARPER BEAMS — Folder describes the high speed warper beams for rayon tire cord and cotton; cast aluminum end supports and large diameter heads. — U. S. BOBBIN & SHUTTLE CO., Lawrence, Mass.

R-139 SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for re-use; smaller size for narrow aisles. — WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

R-140 GREASE-SEALED, ANTI-FRICTION ROLLS Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units. — COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

R-141 HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

R-142 UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives higher yarn quality and better packages at faster speeds and lower costs. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

R-143 VACUUM SCAVENGER SYSTEM — Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes for the removal of broken ends, fly or sliver. Complete diagrams and photos of typical installations. — SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

R-144 PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones. — KIDDE MFG., 35 Farrand St., Bloomfield, N. J.

R-145 ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full floating footstep bearing is pictured in cut away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Gakwood Ave., Cleveland, Ohio.

R-146 CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

R-147 SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

R-148 WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. B. CARTER, INC., Gastonia, N. C.

R-149 TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book. — ARMSTRONG CORK CO., Industrial Div., Lancaster, Pa.

R-150 LINT-FREE MOTOR — Motor for constant speed a-c driven pickers, roving frames, spinning and twisting frames and winders operating in lint-laden atmosphere described in bulletin. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-151 TAPE FOR DRIVING SPINDLES — Booklet, including sample, describes new banding for spindle drives on twisting, roving, and spinning frames. — BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-152 GIANT ALUMINUM COTTON BEAMS — Information on new 38" x 54½" section beams for cotton and other spun yarns. Does work of two 28" beams. Saves handling time. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-153 WOOLEN SPINNING FRAME — Colored picture of the Davis & Furber Simplex woolen spinning frame suitable for mounting is available. Technical details on floor plan ranges, sizes, etc., on back. — DAVIS & FURBER MACHINE CO., North Andover, Mass.

SLASHING—WEAVING—CLOTH ROOM—TUFTING

R-201 LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

R-202 COUNTING AND MEASURING DEVICES— Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production recording on all types of textile machinery. — VEEDER-ROOT, INC., Hartford, Conn.

R-203 LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

R-204 INNOVATION IN TEXTILE DRYING — Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

R-205 SLASHING HINTS — A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, tips on cooking equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

R-206 LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

R-207 ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

R-208 THE STORY OF STARCHES — Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches. — NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, N. Y.

R-209 LADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

R-210 HELP ON SIZE PROBLEMS — Information from Southern Sizing Company outlines how their "superior sizing compounds and superior service can help make your mill run better." — SOUTHERN SIZING CO., East Point, Ga.

R-211 STEEL WARP BEAMS — 20-page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

R-212 PENFORD GUMS IN TEXTILES — Brochure tells how the wide range of viscosities and the excellent properties of Penford Gums make them desirable for warp sizing spun yarns. — PENICK & FORD, LTD., INC., 420 Lexington Ave., New York 17, N. Y.

R-213 SACO-LOWELL POSITROL SLASHER — Color brochure gives 14 advantages of the Saco-Lowell Positrol Slasher. Includes photographs, cut-away drawings, sectional pictures, diagrams, photomicrographs. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

R-214 ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N. C.

R-215 WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Co. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE CO., West Point, Georgia.

R-216 AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-217 BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. — THE MERROW MACHINE COMPANY, 28 LAUREL STREET, Hartford, Conn.

R-218 LOOM REED BOOKLET — Pamphlet describes in detail the following reeds: All Metal Reeds, Pitch Band Reeds, All Metal Spring Baulk Reeds, All Metal Plush Reeds, All Metal Ribbon Reeds, and special Reeds for Warner & Swasey Looms. — STEEL HEDDLE MFG. CO., 2100 West Allegheny Ave., Philadelphia 32, Pa.

R-219 BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include Information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dyeing Ranges, Kettles, T-Boxes, etc. — COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

R-220 NOPCO CHEMICAL DATA SHEETS — are available on Nopcostats, Nopco Sizes N and D. Important Points in Warp Sizing. Interpretation of Analysis, Wetting Agents, Balanced Wool and Worsted oils, Acetate Warp Sizing, Viscose Warp Sizing, Rayon Soaking. — NOPCO CHEMICAL CO., Harrison, N. J.

R-221 ALIGNING LAYS — Informative booklet gives setting instructions for aligning lays. Complete treatment, including step-by-step drawings. — DRAPER CORPORATION, Hopedale, Mass.

R-222 BALING PRESSES — An illustrated folder describing this manufacturer's complete line of balers for all materials. Both downstroke and upstroke models. — ECONOMY BALER CO., Ann Arbor, Mich.

R-223 COBBLE TUFTING MACHINES — Literature available on Cobble Tufting Machines with Automatic Pattern Attachments shows how these machines open up new vistas to the tufting industry. — COBBLE BROS. MACHINERY CO., INC., River Road, Chattanooga, Tenn.

R-224 AMCO HELICLONE LOOM CLEANER — Booklet shows how Amco Helicloner Loom Cleaners have made obsolete the time-consuming job of cleaning looms manually with an air hose. — AMERICAN MOISTENING CO., Providence, R. I.

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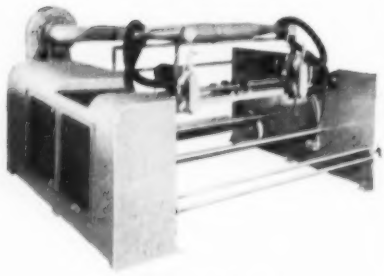

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R-226 PREVENTION OF FABRIC DISTORTION—How to eliminate fabric distortion and where to check for fabric distortion are discussed in new bulletin. Entire fabric processing operation is reviewed. — MOUNT HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass.

R-227 FORMULAS FOR SLASHING ARNEL — 10 new formulas for slashing Arnel, bringing the total to 16, are contained in bulletin, which also includes information on warping, weaving and quilling of Arnel. — TEXTILE SALES DEPT., CELANESE CORP. OF AMERICA, P. O. Box 1414, Charlotte 1, N. C.

R-228 THE RANDOM WEB PROCESS — Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut away diagrams. — CURLATOR CORPORATION, TEXTILE DIVISION, 501 W. Commercial St., East Rochester, N. Y.

R-231 FREE WHEELING EXPANDERS — Pamphlet explains how Mount Hope Expanders eliminate distortion and where they keep fabrics free of distortion. — MOUNT HOPE MACHINERY CO., 15 Fifth Street, Taunton, Mass.

R-232 HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages. — VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

R-233 GATES TEXTILE ACCESSORIES — Handy pocket size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others. — THE GATES RUBBER COMPANY, 1991 Broadway, Denver 17, Colo.

R-234 COCKER SLASHERS — Booklet examines the Cocker Slashers from stem to stern, pointing out advantages and giving specifications. Includes allied equipment. — COCKER MACHINE AND FOUNDRY CO., Gastonia, N. C.

R-236 UNIFIL LOOM WINDER — Booklet describes a new concept of filling preparation which needs no quilling area, no quilling labor, no quill hauling, no battery plugging, no stripping area, no stripping labor. Complete operation described. — UNIVERSAL WINDING CO., P. O. Box 1405, Providence 1, R. I.

R-237 HIGH SPEED WARP SIZER — Brochure includes information on a new warp sizer evolved from twenty years' study. Outstanding features and specifications included. — COCKER MACHINE and FOUNDRY CO., Gastonia, N. C.

R-238 TRAVELING LOOM CLEANER — Booklet enumerates advantages of the new Oscillaire which are continuously oscillating air outlets, elongated flexible sleeves, and air jets of extra high velocity. — PARKS-CRAMER CO., Fitchburg, Mass.

R-239 DRAPER REPAIR PARTS CATALOG — Now available is a repair parts catalog for Draper E, K and Modified D looms. Contains illustrations covering all mechanisms and constructions, together with complete listings. — DRAPER CORPORATION, Hopedale, Mass.

R-240 BALING PRESSES — Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished goods, textile fibers, wool, and waste of all kinds. — LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

R-241 TEXTILE MACHINERY PARTS CATALOG — A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

R-243 COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. — TRUMETER COMPANY, 1265 Broadway, New York 1, N. Y.

R-244 SQUIRREL-CAGE LOOM MOTOR — Bulletin describes totally enclosed, non-ventilated, constant-speed motors with ample overload capacity to break in new looms. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-245 STATIC BARS — Humorous booklet by Simco illustrates the characteristics of static and how Simco Midgets can overcome the problems involved. — THE SIMCO CO., 320 Walnut St., Lansdale, Pa.

R-246 CARE OF DRAPER SHUTTLES — Booklet tells how longer, trouble-free service may be obtained from Draper Shuttles through proper care. — DRAPER CORP., Hopedale, Mass.

R-247 CLUTCH BRAKE MOTOR FOR DRAPER LOOMS — Bulletin describes integrated clutch brake motor with high inertia rotor, clutch and brake, providing compact power package for driving Draper looms. — WESTINGHOUSE ELECTRIC CORP., P. O. Box 2278, Pittsburgh 30, Pa.

R-248 WARP SIZING — Information available on "Size that Satisfies." — STODGHILL & CO., 716 Ponce de Leon Pl., N.E., Atlanta, Ga.

KNITTING

R-301 THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

R-302 FORGED HEAD ALUMINUM BEAMS — Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams. — MILTON MACHINE WORKS, INC., Milton, Pa.

R-303 THE KIDDE KNITTER — Bulletin describes this newest in Raschel-type warp knitting machines and higher production attained with it. — KIDDE MANUFACTURING CO., INC., 35 Farrand St., Bloomfield, N. J.

R-306 BOOKLETS ON FIDELITY MACHINES — Following booklets available: Fidelity "400," Fidelity Multi-Design Ribber, Fidelity Skein Reelers. — FIDELITY MACHINE CO., 3908-18 Frankford Ave., Philadelphia 24, Pa.

R-307 NEEDLE OIL DOES NOT STAIN — Booklet on "Gulftex 39" non-staining needle oil developed for knitting mills. — GULF OIL CORP., P. O. Box 1166, Pittsburgh 30, Pa.

DYEING—BLEACHING—FINISHING—PRINTING

R-401 SOLVENT DETERGENTS — Revised sixteen-page, illustrated booklet tells how solvent detergents, used without heat, remove carbonized grease and oil and certain types of paint, and provide temporary rust protection after cleaning. — OAKITE PRODUCTS, INC., 128C Rector St., New York, N. Y.

R-402 SONOCO TUBES FOR PACKAGE DYEING — Color bulletin describes Sonoco's Dytex tubes for one-time use in standard package dyeing equipment to achieve uniformity. — SONOCO PRODUCTS CO., Hartsville, S. C.

R-403 TEXTILE FINISHING MACHINERY — Folder available from Marshall and Williams Corp. shows excellent photographs of each piece of finishing equipment manufactured by the firm. — MARSHALL AND WILLIAMS CORP., 46 Baker Street, Providence, R. I.

R-405 HUNTER DYEING EQUIPMENT — Describes fully with diagrams Hunter Model A Dye Becks, Hunter No-Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. Bulletin gives specifications of each, also shows actual installations of Hunter equipment. — JAMES HUNTER MACHINE CO., North Adams, Mass.

R-408 HYDROGEN PEROXIDE — New booklet covering the properties, uses and handling of hydrogen peroxide is now available. Illustrated with tables and diagrams, the text covers chemical reactions, handling and storage. Write Adv. and Sales Prom. Dept., SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y.

R-409 NONIONIC SOFTENER — Booklet lists properties and test procedures for "Emersoft 7760," as well as application data for use in finishing most cottons. — EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

R-410 TO MATCH M-107 KHAKI SHADE — Formula for matching the government's standard M-107 Khaki shade on 10-oz. tropical worsted has just been released. — SANDOZ CHEMICAL WORKS, INC., 81-23 Van Dam St., New York 13, New York.

R-411 INDUSTRIAL CHEMICALS — 24-page booklet listing alphabetically Harshaw industrial chemicals and applications. — THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland 6, Ohio.

R-412 CATIONIC SURFACE ACTIVE AGENT — Technical bulletin describes Harshaw's Uversoft "10" which produces full, soft hand while acting as an effective anti-static agent. — HARSHAW CHEMICAL CO., 1945 East 97th St., Cleveland 6, Ohio.

R-413 CHEMICALS, DYES AND INTERMEDIATES —Complete file of bulletins available on Metro-Atlantic products. Covers wide range. Write for product resume showing bulletins offered to METRO-ATLANTIC, INC., Centredale, R. I.

R-414 WETTING AGENT — Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out. — ROHM & HAAS COMPANY, Philadelphia 5, Pa.

R-415 DU PONT PEROXIDE BLEACHING SYSTEMS — New book illustrating and describing this continuous peroxide-bleach system. Layouts and other information included. — E. I. du PONT de NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

R-416 SURFACE TENSION DEPRESSANT — The booklet, "Mercerizing and Alkamerce — The Ideal Dry," contains description of a product, which can be used as a wetting agent, a dye leveling agent, a penetrant in package dyeing. — HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

R-417 TOYCE TEXTILE CHEMICALS — This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing. — ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

R-418 FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES — 24-page booklet entitled "If You Use Water," discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange, softening, dealkalization, and deionization. — ROHM & HAAS COMPANY, RESINOUS PRODUCTS DIV., Washington Square, Philadelphia 5, Pa.

R-419 THEORETICAL AND APPLIED SILK SOAKING — Attractive twenty-four page booklet outlining methods of silk soaking and telling of investigation on the soaking, back-winding and degumming of silk. — HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

R-420 BRINE FOR TEXTILE INDUSTRY — 32-page booklet on the Lixate Process replaces former booklet on making brine that has been a standard reference for years. Contains much more technical information. — INTERNATIONAL SALT CO., INC., Scranton, Pa.

R-421 DEPUMA, an odorless, viscous, non-evaporating emulsion which is highly efficient as an antifoam, useful in all phases of dyeing and printing, is described in a booklet available from—AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

R-422 CATALYST AC-6 — Booklet describes how Catalyst AC-6 steps up curing efficiency as much as 25%. Free eight-ounce bottle upon request. — MONSANTO CHEMICAL COMPANY, PLASTIC DIVISION, Dept. TI-3, Springfield 2, Mass.

R-423 NEW SODA ASH BULLETIN — 64-page edition contains both new material and revisions of previously used data covering the subject. — SOLVAY SALES DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y.

R-424 AQUAROL AND ARKANSAS PRODUCTS—Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn hosiery processing. — ARKANSAS CO., INC., Newark, N. J.

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R-426 INDUSTRIAL OIL — Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources. — SWIFT & COMPANY, INDUSTRIAL OIL DEPARTMENT, 1800 165th Street, Hammond, Indiana.

R-427 RESINS & LATICES — Booklet describes Chemigum latex, Pliolite latex, Plivola latex, Pliovic AO and their applications. Gives properties of Goodyear latices. — GOODYEAR CHEMICAL DIV., 1144 East Market St., Akron 16, Ohio.

R-428 CHEMICAL CATALOG — Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants with chemical composition, properties and application. — ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

R-429 WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write — WICA CHEMICALS INC. P. O. Box 596 Charlotte, N. C.

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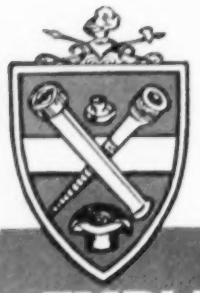

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R-856 STAINLESS STEEL FOR TEXTILES — 40 page booklet gives applications and advantages of stainless in textile plant equipment of all types. — ALLEGHENY LUDLUM STEEL CORP., Dept. TI-51, Oliver Bldg., Pittsburgh 22, Pa.

R-856 COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc. — WESTINGHOUSE ELECTRIC CORP., 541 Wood St., Pittsburgh 30, Pa.

R-857 FINNELL COMBINATION SCRUBBER-VAC — Illustrated literature gives complete specifications and describes various methods of combination machine scrubbing, including method recommended for cleaning oily floors. — FINNELL SYSTEMS, INC., 1300 East 80, Elkhart, Indiana.

R-858 AUTOMATIC LUBRICATORS — Four-page brochure describes "high pressure" automatic lubricators and their application to a wide range of machines. — BIJUR LUBRICATING CORP., 151 West Passaic St., Rochelle Park, N. J.

R-859 DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. — DODGE MANUFACTURING CORP., Mishawaka, Ind.

R-860 INDUSTRIAL GREASES — Now available from Sinclair is a bulletin detailing qualities and specifications of multi-purpose lithium soap industrial greases. — A. S. RANDAK, SINCLAIR REFINING CO., 600 Fifth Ave., New York, N. Y.

R-861 "VARI-PITCH" SHEAVE BULLETIN — Stationary and motion control of "Vari-Pitch" sheaves for speed variation by means of pitch diameter adjustment are described in new bulletin. — ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wis.

R-863 PENETRATING WOOD FINISH — Bulletin gives applications, uses and application specifications of floor seals for textiles. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIVISION, Wilmington, Del.

R-864 CERTIFIED CLIMATE AIRCHANGER SYSTEM — Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning. — PARKS-CRAMER CO., Fitchburg, Mass.

R-865 HOW TO SELECT LIQUID METERS—Helpful free bulletin covers meters for brines, soap solutions, hot and cold water and other chemical solutions that can be handled by composition bronze meters. Write for bulletin 5861TI. NEPTUNE METER CO., 19 W. 50th St., New York 20, N. Y.

R-866 STORAGE WATER HEATING — Isotherm Storage Water Heating Bulletin No. 923 on hot water heating to stretch boiler capacity. — FRED H. SCHAUB ENGINEERING CO., 2110 South Marshall Brochure by Bennet Rose describes varieties materials

R-867 AIR LINE FILTERS — Catalog describes various air line filters for removal of oil, corrosive moisture, abrasive pipe scale, rust, and other solids from compressed air lines. Write for Catalog No. 700. — C. A. NORGREN CO., 3450 So. Elati St., Englewood, Colo.

R-868 RIDGE TOOL PRICES — Catalog gives net prices on Rigid Pipe Tools. Capacities and weights included along with pictures of each tool. — RIDGE TOOL CO., Elyria, Ohio.

R-869 STAINLESS STEEL FABRICATION — Illustrated color booklet by Simo describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying, slasher exhaust, and materials handling systems. — SIMS METAL WORKS, West Point, Ga.

R-870 "AIR-PROCESSING" — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. — J. O. ROSS ENGINEERING CORP., 414 Madison Ave., New York 17, N. Y.

R-871 COLOR CONDITIONING — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington 98, Del.

R-872 METAL CONVEYOR BELTS — Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Belt design and application, along with their Woven Wire Constructions and Positive Drive Chain Edge Belts. — ASHWORTH BROS., INC., METAL PRODUCTS DIV., Fall River, Mass.

R-873 RIHCO HUMIDIFIERS AND COOLING SYSTEMS — Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, P. O. Box 750, Atlanta, Ga.

R-874 DYNAC BRAKE MOTORS — Folder on Dynac controllers for electrical braking of a.c. motors with special textile applications — roving, spinning, knitting. — WESTINGHOUSE ELECTRIC CORP., Pittsburgh, Pa.

R-875 TEXTILE APPLICATIONS FOR "SCOTCH" TAPE — Uses for "Scotch" Tape in spinning, weaving, finishing, carpet manufacture, garment manufacture, packaging and general maintenance are covered in new booklet. — MINNESOTA MINING AND MANUFACTURING CO., St. Paul 6, Minn.

R-876 POWER LUBRICATION SYSTEMS — Up-to-the-minute details on the most recent developments in power lubrication systems are featured in new catalog. Includes complete description of Lincoln automatic centralized systems. — LINCOLN ENGINEERING CO., St. Louis 20, Mo.

MATERIALS HANDLING

R-901 CASTERS AND WHEELS — 192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. — DARNELL CORP., LTD., Long Beach 4, Calif.

R-902 LANE CANVAS BASKETS — 16-page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

R-903 OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem. — THE AMERICAN MONORAIL CO., 13100 Athens Ave., Cleveland 7, Ohio.

R-904 HOW TO TEST CORRUGATED BOXES — 24-page booklet offers a comprehensive check-list by which to judge the protective qualities and durability of specific corrugated boxes. — HINDE & DAUCH, Sandusky, Ohio.

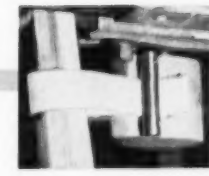
R-905 CONVEYOR KEY BOOK — A guide to production "step-ups" now possible with modern conveying. Shows time and effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results. — LOGAN CO., 1115 Franklin St., Louisville, Ky.

R-906 HOW TO SELECT A LIFT TRUCK — An equipment analysis guide and rating table has been introduced by Hyster for comparison and selection of fork lift trucks. Gives an excellent means for price comparison between trucks of a similar nature. — HYSTER CO., 2902 N. E. Clackamas St., Portland 8, Oregon.

R-907 CORRUGATED CONTAINERS — Brochure by Gaylord describes Multi-Unit and Bulk Containers which have been adapted for the textile field. — GAYLORD CONTAINER CORP., 111 N. 4th St., St. Louis 2, Mo.

R-908 MODERN PACKAGE HANDLING — New bulletin describes in detail new techniques of package handling and role engineered textile conveyor systems play. — ALVEY CONVEYOR MFG. CO., 3306 Olive St., Rd., St. Louis 24, Mo.

The Dodenhoff Hydraulic Checkmaster*



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Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 36)

named the division's plant manager, succeeding the late Clyde H. Beaton. Appointed to succeed Mr. Ramsbottom was **Lucien J. Poisson** of the department's supervisory staff.

Dr. Edward A. Murray, textile consultant of Anderson, S. C., has been appointed director of instruction in the School of Textiles at North Carolina State College. His principal duty will be to study the content of the undergraduate curricula and to recommend improvements, including major changes, as they seem desirable in light of educational trends and the needs of the textile industry. Dr. Murray will also serve as a staff adviser to the dean of textiles primarily on undergraduate, and to some extent on graduate-level education.

OBITUARIES

Rupert C. Aycock, 79, sales representative for Fidelity Machine Co., Inc., Chattanooga, Tenn.

Ely Reeves Callaway, Sr., 78, retired vice-president and director Callaway Mills Co., LaGrange, Ga.

Hugh Christison, 72, retired chief chemist of Arlington Mills, Lawrence, Mass., and former national vice-president of AATCC.

Prof. Milton Hindle, 60, faculty member of Lowell (Mass.) Technological Institute.

William Herbert McDowell, 73, retired vice-president of Halifax County Hosiery Mills, Inc., Scotland Neck, N. C.

Martin Saligman, vice-president of Queen Knitting Mills, Inc., Philadelphia, Pa.

Leo Wallerstein, founder and board chairman of Wallerstein Co., Inc., New York, N. Y.

Elwood G. Walls, 67, retired president of the former Walls Hosiery Co., North Wales, Pa.

What the TEXTILE MILLS are doing

The Tifton, Ga., plant of **Amerotron Corp.** has ceased operations and will be sold. At peak production the plant employed about 270 persons.

Aragon (Ga.) Mills, a unit of United Merchants and Manufacturers, recently held a barbecue and field day for the 750 employees, and their families, of that plant.

The Galt, Ontario, plant of **Wool Combing Corp. of Canada, Ltd.,** has been liquidated and the best of the machinery moved to the main plant in Acton, Ontario.

A modern carpet wool preparation and yarn making plant at Calhoun Falls, S. C., will be erected by **Bigelow-Sanford Carpet Co.** Construction will begin immediately to ready the plant for operation in the second half of 1957.

Controlling interest in Klopman Mills, Inc., Greensboro, N. C., has been acquired by **Burlington Industries, Inc.** plant will be operated as an independent unit of Burlington under the direction of William Klopman, Sr.

A $2,000,000 cotton mill is being planned for construction in Valleyfield, Que., by **The Montreal Cottons, Ltd.**

New and up-to-date knitting equipment is being installed and operated in Waterville, N. Y., by **Barclay Knitwear Corp.** in a building formerly occupied by a knitting mill.

The stockholders of **Bates Mfg. Co.,** have approved the purchase of the **Lynchburg (Va.) division of Consolidated Textile Co., Inc.,** for the production of quality carded fabrics. Bates is expanding its home furnishings and piece goods lines.

Beeren Knit Wear, Inc., has moved its plant from Hickory Grove, S. C., to a 120,000 sq ft building in Clover, S. C.

Some 250 employees of the Trion, Ga., division of **Riegel Textile Corp.** are enrolled either in Dale Carnegie courses or in some vocational course. Classes are conducted in textile chemistry and finishes, and in card, spinning, spooler, and loom fixing.

Cone officials inspecting their Carlisle finishing plant (l to r): Marshall Gardner, assistant vice-president; Clarence N. Cone, vice-president; Charles Daniel, of Daniel Construction Co.; Marion W. Heiss, vice-president; Lewis M. Heflin, president of Cone Mills, Inc.; and Ceasar Cone, president of Cone Mills Corp. In the napping room: Earle R. Stall, vice-president; P. C. Gregory, Jr., assistant vice-president; Gordie Boyd, production manager and superintendent; and Sydney M. Cone, Jr., vice-president.

A 13-acre dyeing, finishing, and printing plant nears completion by **Cone Mills Corp.** in Carlisle, S. C. Already in partial operation, the plant is expected to be in full production early in 1957, and, at capacity, to employ approximately 600 people. Built to provide for further expansion, the main building can be enlarged in three directions (the boiler house, filter plant, and pump house can be enlarged accordingly). One of the country's largest dyeing, finishing, and printing plants under one roof, the one-story structure, with basements and mezzanines in parts, holds under a single roof the complete finishing operation. The equipment is arranged in a U-shape, opening onto the receiving and shipping warehouse. Grey goods enter the building at the South end and are processed from there through the grey room, then to drying or mercerizing or napping, to the dyeing machines, printing machines, agers, soapers, shrinkers, hookers, through packing, and end up in the warehouse area again. The area down the center of the U is used for the various service departments.

The facilities of the 150,000 sq ft plant of the Duplan Corp. at Burnsville, N. C., have been leased on a long-term basis by **Firth Carpet Co.** The plant, idle now for several months, will begin operations immediately, and is expected to be in full operation by late 1957.

The Pontiac (R. I.) Division of **Fruit of the Loom, Inc.,** has completed the installation of a heat exchange system which is believed to be the largest of its kind in the textile industry.

The 600 employees of **Groves Thread Co., Inc.,** Gastonia, N. C., are slated to receive the benefits of a profit sharing retirement plan recently set up by that company and retroactive to November 1, 1955. Under the present schedule, the average employee will receive an income of $100 a month in addition to Social Security benefits.

The empty cotton mill in Marysville, N. B., purchased by **Hamilton**

NEW *Catalog* SHOWS 1957 LINE

In this new catalog, you'll see illustrated and described the many types of fountains or coolers for industrial use and the many features that make the Halsey Taylor line outstandingly superior.
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What the TEXTILE MILLS are doing

Cotton Co., Ltd., now houses a pilot plant. Full production is scheduled for late 1957.

Adding pile and fleece goods to a line of wool and synthetic jersey, **William Heller, Inc.,** has acquired the Academy Knitted Fabrics Corp., of Mount Vernon, N. Y.

Textron, Inc., is curtailing its textile operations—the **Amerotron Corp.**—to leave in production the South Carolina plants at Barnwell, Belton, Honea Path, and Williamston; the North Carolina plants at Robbins and Red Springs; the Hartwell, Ga., plant, and one small cotton mill. Insofar as is possible, the plants being disposed of will be sold as going concerns. The production being discontinued consists of tricot, industrial, and automotive fabrics. The firm mentioned the depressed state of textiles brought on by foreign imports on top of existing surplus facilities as reasons for the decision to curtail.

Danan Mills, Inc., 3475 Third Ave., New York 56, N. Y., has converted to lockstitch machinery capable of elasticizing goods as wide as 60 stitches. The firm devotes 90 to 95% of its operations to bathing suit manufacture.

Sterling Dyeing and Finishing Co., Philadelphia, Pa., has installed new pre-setting equipment for handling yarns such as Tycora and Ban-Lon. The company also has acquired an additional 20,000 sq ft in the building it now occupies at 3330 N. 3rd St. The expansion will require the relocation of some of the existing equipment.

The **Monument Mills, Inc.,** Housatonic, Mass., has ceased operations. Reduced production and efficiency from "union-incited turmoil" was given as a major reason for the permanent closing.

The new dye house of **Nelly Bee Products,** Hickory, N. C., has begun operations on a limited basis. The firm manufactures novelty yarns, the material basis for which is looper clips — that part of a cotton sock trimmed off when the heel is completed and sewed together.

Earmarking some $300,000 for the purchase of new printers, agers, washers, dyers, and additional dye boxes, **Normandy Print Works,** New Bedford, Mass., is entering the roller printing field. No cottons will be processed. The company will screen and roller print acetates, silks, and rayons.

A division of Huntley Hosiery Co., **Huntley Knitting Mills,** has been formed at Charlotte, N. C., to manufacture women's full-fashioned sweaters. Peak production of 600 dozen sweaters per week is contemplated for the current year.

Klopman Mills, Inc., has established a four-year scholarship at the School of Textiles, North Carolina State College. Open to employees of Klopman, and to the children of Klopman employees who attend one of the 26 high schools in which children of Klopman employees are registered, the scholarship is valued at $500 per year, and is to be awarded through competitive examinations.

The **Lanett (Ala.) Mill** of West Point Mfg. Co. has completed the installation of a 150-ton bulk starch silo. The pebble-type starch is conveyed by air-suction from railroad hopper cars to the silo. From the silo it is conveyed (some 40 tons each week) automatically and as needed by screw conveyor to the size cooking area.

Fayetteville (N. C.) Knitting Mills, Inc., of **Chester H. Roth Co., Inc.,** will cease operations on February 1, 1957. Reasons given for the closing: The plant is a marginal producer, and the sale of full-fashioned hose is declining. The plant will be offered for sale.

A new firm which plans to open 12 to 15 retail stores in the Carolinas, Tennessee, and Virginia, **Kingston Mills Retail Sales Corp.,** has been chartered by the State of North Carolina. Rugs and carpets manufactured by Kingston Mills, Inc., Cartersville, Ga., will be sold by the retail firms.

Fabric development of the **J. P. Stevens & Co., Inc.,** has been centralized in a new department called "Cotton Fabric Development Department." Raymond Briden and Robert Mather will staff the new department which will be concerned with the creation and development of new cot-

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The Nation's largest manufacturer of Sizing Compounds, Gums, Waxes, and other kindred products for all warp yarns.

ton fabrics, cotton and synthetic blended fabrics, new finishes, and yarns for apparel, home furnishings, and industrial uses. The department will be located in the Stevens building at Broadway and 41st St., New York, N. Y.

A small, idle spinning plant at Randleman, N. C., has been leased from Cone Mills Corp. by **J. P. Stevens & Co., Inc.**

Plans for the addition of 3600 sq ft to the plant of **Swift Mfg. Co.,** Columbus, Ga., have been approved by the directors. The structure will consist of two floors to be added to the South end of the mill. The third and fourth floors thus added will house spinning and warp preparation respectively, and provide space for the addition of new equipment later.

Following the recent sale of all outstanding stock of Dalton (Ga.) Textile Corp., the name of that firm will be changed to **Dalton Yarn Mills.** The officers of the new firm will be: president, Robert F. Hamilton; vice-president, Tom Lambert; and secretary-treasurer, Wells Moore. The plant will produce yarns for the carpet and rug industries.

A new warehouse, to be used almost entirely for the storage of jute fibers, has been completed by the **Revonah Spinning Mills** at Hanover, Pa. The building will enable the firm to store its raw synthetic staple and

spun yarns in the warehouses at the plant. The warehouse will hold 20,000 bales of jute, has room for seven railway cars alongside it, is divided into six storage units, and has a completely covered loading platform.

Pre-planning efforts made by the management of **Dye Masters, Inc.,** 1511 West Florence Ave., Inglewood, Calif., before the plant was moved to an old building at that location, have resulted in an installation which permits work in process to trace a circular pattern as it progresses through the various operations. It ends up near the point at which it entered the plant. The dyeing equipment is entirely of stainless steel, and each unit is hooded to facilitate steam removal. The firm dyes both yarn and piece goods. Each piece of equipment was first located on a scale model by templates before renovation was begun.

Wexler Knitting Mills, Inc., Philadelphia, Pa., is moving to new and larger quarters at 22nd and Arch Streets where the plant will occupy 23,000 sq ft on the eighth floor.

The William Carter Co. will enter a $500,000 expansion program to provide additional room for printing, knitting, and bleaching facilities at the Barnesville, Ga., plant.

Talbot Mills, Billerica, Mass., has been purchased by **Massachusetts Mohair Plush, Co., Inc.,** which also owns the Neisler Mills. The purchased company will continue to operate with the same management.

Selma (N. C.) Mills, which shut down several weeks ago, has been purchased by **C. and H. Enterprises,** Atlanta, Ga.

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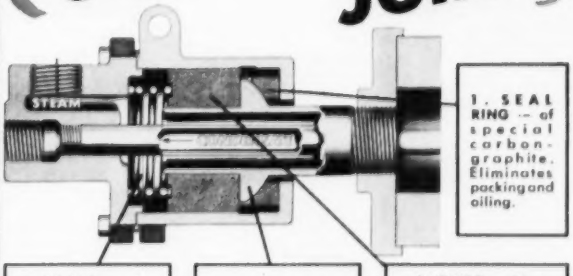
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SUPPLIERS News

WHAT THEY ARE DOING

Dr. C. Scott Althouse has been elected chairman of the board of **Althouse Chemical Co.**, a division of Crompton & Knowles Corp. He is succeeded as president by Howard F. Bjork, previously president of Index Chemical Co., a subsidiary of Pennsylvania Salt Manufacturing Co.

To be completed in the spring of 1957 at Paterson, N. J., is a new sales office, dye testing laboratory, and warehouse for **American Aniline Products, Inc.**, a subsidiary of Koppers Co., Inc. Work on the structure, which will afford 50,000 sq ft of floor space, was begun in October.

Willcox & Gibbs Sewing Machine Co. has appointed Arthur Miller to the post of general sales manager and Charles Haviland as assistant to the general sales manager.

C. W. Bendigo has been named technical director of the fibers division of **American Cyanamid Co.**, recently formed to produce Creslan at the firm's new plant to be constructed in Santa Rosa County, near Milton, Fla. William L. Lyall, Jr., formerly with Bates Fabrics, Inc., has been appointed sales manager, and Dr. N. H. Marsh has been named plant manager. Alden R. Loosli is general manager of the fibers division.

The American MonoRail Co. announces the formation of the Pacific Coast division with offices in Los Angeles, Calif. L. P. Helbert has been named manager, and E. E. Chubbuck is southern California district manager. * * * New officers of Canadian MonoRail Co., Ltd., are Quigg Lohr, president; A. S. Wrobleski, vice-president, sales; Earl W. Balke, director and plant manager; R. H. Miller, secretary and treasurer. * * * The board of directors of the Landahl Conveyor Co., subsidiary of The American MonoRail Co., has been increased from three to five members, and new officers have been elected as follows: C. L. Fell, president; C. E. Barner, vice-president; R. H. Miller secretary-treasurer.

Dedication ceremonies, placing into operation the new eight and a half-million dollar merchant bar and rod mill of **Atlantic Steel Co.**, were held on November 13.

Charles R. Yates, formerly southeastern sales manager of **Joshua L. Bailey & Co., Inc.**, is the firm's new vice-president. He will supervise all activities in the South, with headquarters remaining in Atlanta.

At Charlotte, N. C., a branch plant of **The Baxter Corp.** has been opened to cut original patterns for Jacquard looms. Roy Thompson has been named general manager of both Grover, N. C., and Charlotte operations, and James D. Hutton is resident manager.

Mr. Platzman
Acoustica

Mr. Maddox
Standard Oil

Acoustica Associates, Inc., has announced the election of Paul M. Platzman as vice-president of sales and manufacturing. Mr. Platzman was formerly manager of the public relations department of John Mather Lupton Co., Inc., and prior to that association, was New York editor of TEXTILE INDUSTRIES. Harold P. Baker has been made vice-president and treasurer, and Ralph Reynolds technical sales manager.

W. H. Maddox, assistant division manager for **Standard Oil Co. (Ky.)**, has been appointed division manager for Georgia, succeeding Harry W. Graves of Atlanta who has retired. He has been succeeded as assistant division manager for Georgia by Robert M. Boswell.

John W. Collier Co., Inc., has announced its affiliation with the **Ralph Gossett Co.** as the exclusive Collier representative of its specialized services to the textile industry for the repairing of spinning rings, cotton or worsted flyers and spindles, in Virginia, North and South Carolina.

Southeastern Loom and Machine Works expected to move from Greenville, S. C., to its new building in Greenwood, S. C., by December 31, 1956.

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Mr. McAbee
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Roy S. Fisher has been elected vice-president and named director of sales for **National Vulcanized Fibre Co.** In his new capacity, Mr. Fisher will direct the sales of industrial and consumer products including Lestershire textile bobbins and Kennett materials handling receptacles to both domestic and overseas markets. * * * Lestershire Division announces the appointment of G. Milton Hutchinson to represent the Lestershire Spool Division in the New England area with headquarters in Waltham, Mass. Mr. Hutchinson was formerly president and general manager of the American Bobbin Co.

In a realignment of the sales department of **The Colson Corp.**, W. C. Shea, formerly director of sales, has been moved to assistant to the vice-president for sales. D. F. Adams, who previously directed sales of industrial products, is now sales manager. John M. Spooner, formerly advertising and sales promotion manager, has been promoted to director of marketing, a new position. He will continue to be responsible for advertising and sales promotion and publicity, and in addition assumes responsibility for market research, sales forecasting, sales training, and customer service. S. A. Leone, formerly sales manager for Colson's line of conveyor equipment, has been named manager of special products.

Copeland Brothers & Co., a division of the Copeland Holding & Investment Co., has opened a new sales office in Atlanta, Ga., for knitting and weaving yarns. Offices are also maintained in Chattanooga, Tenn., Griffin, Ga., and Dallas, Tex. Carl Davidson, formerly manager of the Dallas office, will be in charge of the new Atlanta office.

The K. J. Trading Corp. has announced an agreement under which the Philip multi-feed interlock outerwear machine will be built and produced by **Supreme Knitting Machine Co.**

Cecil A. McAbee was recently appointed as sales representative for **Product Sales, Inc.** His territory includes the states of Ala., Ga., Miss., La., Ark., and Texas.

Recently appointed to represent Mitcham & Co. in Georgia, Alabama, and Tennessee was the **Charles G. Stover Co.**, succeeding the late Harry Haynes.

Turbo Machine Co. has completed a demonstration unit of its finishing machinery for fur-like high pile fabrics. The equipment is being shown to mill owners by appointment.

Ultra-Violet Products, Inc., has appointed Black Light Southeastern Corp., Atlanta, Ga., as exclusive distributors of the firm's products in the southeastern states. C. Howell Starr and Paul B. Seanor head the new corporation which carries a complete stock of all items in order to render prompt service to customers.

Carl W. Gram, Jr. has been named vice-president in charge of sales for the **Mason-Neilan Division** of Worthington Corp. His headquarters remain at 100 Park Ave., New York.

At **Yale & Towne Manufacturing Co.** Louis W. Jander, former general sales manager of the Henry Disston Division of H. K. Porter Co., Inc., has been appointed eastern regional sales manager of Yale materials handling division; Neal J. Kemp, Jr., has been named midwestern regional sales manager for the division; Joseph J. Murray has been appointed manager of the New York industrial lift truck sales and service branch; and Richard C. Slater has been named manager of Worksaver and Warehouser sales.

The **Carolina Yarn Association** has elected as its president Frank P. Barrie, district manager of Universal Winding Co., succeeding Frank Causey of American Thread Co. Other officers elected were Henry Stokes, of Cosby & Thomas, vice-

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SUPPLIERS News — WHAT THEY ARE DOING

president; Masten R. Dalton, Chemstrand Corp., treasurer; and John C. Thompson, E. I. du Pont de Nemours & Co., secretary.

American Cyanamid Co., dyes department, announces the development of methods for manufacturing dyes of controlled particle size, each dye having its own specific particle size and shape. The scientific advance is incorporated in the firm's Calcoloid vat pastes and powders, and maximum advantages claimed for the new development are enumerated in a brochure devoted to the subject. * * * August Merz, Calco Chemical Div., received an honorary degree at a special gathering at Lowell Technological Institute, held in honor of the memory of Sir William Henry Perkin. The honor was bestowed upon Mr. Merz for his work as "consultant, humanitarian, highly regarded by men of substance and influence."

William H. Wilson, formerly executive vice-president of the Standard Fruit and Steamship Co., has been named new president of **Virginia-Carolina Chemical Corp.** William C. Franklin, who had been serving as acting president, has become permanent chairman of the board, succeeding former governor John S. Battle. * * * Alfred Greenfield has been appointed assistant sales manager of the fiber division, with headquarters remaining at the New York office.

Dr. James C. Hodge, vice-president of **Warner & Swasey Co.,** has been elected executive vice-president and director of the company. As director, Dr. Hodge succeeds Warren J. Henderson, who has resigned.

Dr. Ralph E. Oesper, professor emeritus of chemistry, University of Cincinnati, has been presented the first annual **Dexter Chemical Corp.** award for outstanding work in the history of chemistry. The award, consisting of a cash prize of $250 and a plaque, was established this year. * * * Sanford Krell has joined the chemical laboratory of the firm. Mr. Krell was formerly employed as a chemist in the quality control laboratories of Standard Brands. * * * Among others receiving honorary degrees at a special academic convocation at Lowell Technological Institute, honoring the memory of Sir William Henry Perkin, was Sidney M. Edelstein, president, for "exemplifying the nexus between science and the arts."

John M. Krno has been appointed manager, bulk sales development, **Corn Products Refining Co.,** and David E. Linn has been named manager of sales service, succeeding Mr. Krno. Also a vice-president of Corn Products Sales Co., Mr. Krno is responsible for planning and coordinating sales programs on all new additions to the company's bulk product line.

Atlas Powder Co. has announced that Adrian J. Stewart, technical representative in charge of the company's chemicals sales office in Atlanta, Ga., has been transferred to its international chemical sales department in Wilmington, Del. Succeeding him in Atlanta is Robert L. Herrman, Jr., formerly in the company's product development department in Wilmington.

Synthane Corp. announces the relocation of its sales representative, Clarence B. Moss, to 7400 Sheffield Drive, West Hills, Knoxville 19, Tenn.

Heading a list of promotions at the **New Departure Division** of General Motors Corp. are Raymond O. Oyler, formerly midwest region manager at Chicago, and Leonard F. Swoyer who formerly headed up the eastern region. Both have become assistant sales managers with offices at Bristol, Conn. In its realignment of sales territories, the division has opened a new area known as the southern region with headquarters at Memphis, Tenn. The old Pacific Coast region is now the western region and includes New Mexico with its main office at Los Angeles. The eastern region has become the northeast region with headquarters at Bristol, Conn.

The 1956 award of the Iowa Section of the American Chemical Society was presented to Dr. C. C. Kesler, director of research for **Penick & Ford, Ltd., Inc.** The award is given each year to an Iowa chemist or chemical engineer in recognition of meritorious achievement in research, teaching, or industry.

A major expansion of the Bridgeport, Pa., plant of **Continental-Diamond Fibre Division** of The Budd Co., the construction of a 65,000 sq ft building expected to be completed in 1957, will make possible the centralization of the entire sheet fibre manufacturing operations of the company under one roof, and a relocation of the vulcoid operation from a leased plant to the Bridgeport facility. Products manufactured in the Bridgeport plant are utilized by a number of industries including textile plants.

Shawinigan Resins Corp. has announced the establishment of a southern district sales office in Atlanta, Ga., under the direction of W. F. Hill, newly appointed assistant district manager.

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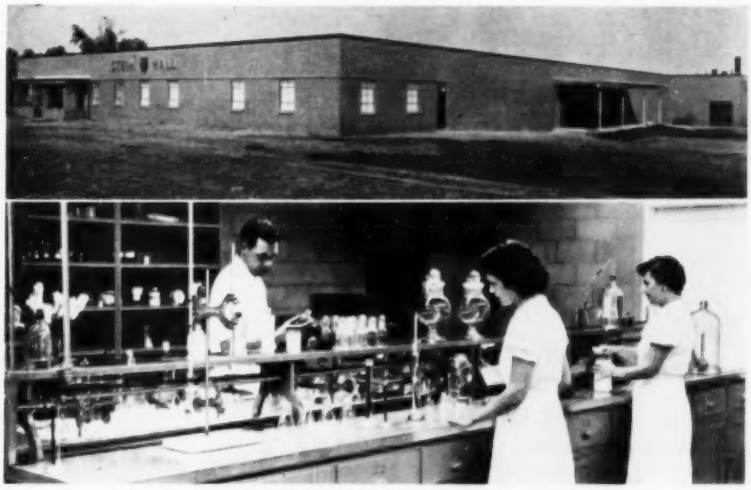

Exterior and interior views of Stein, Hall's new Charlotte facility.

Stein, Hall & Co., Inc., announces the completion of a new plant, office, laboratory, and warehouse building in Charlotte, N. C., built to produce the firm's textile, adhesive, and resin products.

Singer Sewing Machine Co. has completed the construction of a spacious new building on Peachtree Industrial Boulevard in Chamblee, Ga., within the greater Atlanta area. The Atlanta agency is under the direction of H. C. Ernest, general agent, and will be headquarters for sales and service throughout Ga., Ala., and northwest Fla.

SKF Industries, Inc., announces the formation of the New England sales district, embracing the states of Conn., Maine, Mass., N. H., R. I., and Vt. D. H. Amidon, formerly of the Hartford sales district, has been appointed to the position of New England district manager with headquarters remaining in Hartford.

The new hydrogen peroxide plant of **Solvay Process Division,** Allied Chemical & Dye Corp., at Syracuse, N. Y., was recently described to the press at a luncheon; and by means of a slide film, guests were shown views of the plant as well as end uses of this chemical which is produced by a new process involving a chemical oxidation reaction.

Textile Bobbin Works, Inc., has appointed R. D. Gasaway of Cornelia, Ga., to represent the firm in Georgia and Alabama.

Bargain Center, Inc., has purchased the Pavia Shuttle Co.

Nalcamine is the trade name of a group of imidazolines now being marketed by **National Aluminate Corp.** Among textile industry uses of these cyclic tertiary amines of high molecular weight are wetting agents, water repellents, and antistatic agents.

Caprolan nylon filament yarns are now available for sampling purposes in a range of finer deniers from **National Aniline Division,** Allied Chemical & Dye Corp. The company has been in commercial production on Caprolan heavy yarns, ranging from 2,000 to 50,000 denier. Caprolan heavy yarns are now commercially available in 13 deniers and filament counts.

Corn Products Refining Co. has appointed C. J. McDowell, R. F. Cohee, R. D. Walter and E. W. Beardsley regional sales service managers in the eastern, central, southern, and western sales divisions respectively, with headquarters in New York, Chicago, Memphis, and San Francisco. These executives will direct the activities of the company's sales service representatives, each in his particular division.

A new plant, located at Kalyan, India, for the manufacture of synthetic dyestuffs for India's textile industry, was recently dedicated. The plant is a joint venture undertaken by Amar Dye-Chem, Ltd. of Bombay, and **Sterling Drug, Inc.** When operating at capacity, the Kalyan plant will produce a complete range of dyestuffs and optical brighteners, as well as pigments. Amar-Dye Chem will be the first plant in India to

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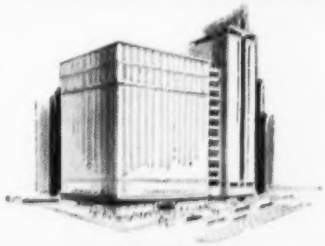

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Emkay Chemical Co. announces the appointment of Robert E. Singer to its technical sales staff to work with Thomas J. McDonald in the New England area on sales of the firm's wide range of specialties for the textile, paper and leather trades. Mr. Singer, whose home is in Cranston, R. I., was formerly representative for the general chemical division of Allied Chemical & Dye Corp.

The election of W. C. Miller as treasurer of **Industrial Rayon Corp.**, following the resignation of Allan P. Lucht from the position, has been announced. Mr. Miller also will continue in the capacity of controller.

Ralph Gossett and Co. has recently been appointed exclusive southern representative for the following companies manufacturing textile supplies and machinery: **Cosa Corp.; M. J. McHale Co., Inc.; John W. Collier Co., Inc.;** and the **Standard Card Clothing Co.**

Mr. Molloy **Mr. Wing**
Crompton & Knowles

Harold R. Wing, a director, vice-president, and general sales manager of **Crompton & Knowles Corp.**, has retired after 39 years with the firm. He will reside at his new home in Jupiter Inlet Beach Colony, Jupiter, Fla. Joseph F. Molloy, former assistant general sales manager in charge of foreign sales, has assumed Mr. Wing's duties as general sales manager.

James MacCracken Adair is new sales manager of the Dynamatic division of the **Eaton Manufacturing Co.**, replacing G. E. Walk who has resigned. Mr. Adair formerly was sales manager of the electric motor division of The Hoover Co.

SUPPLIERS News
WHAT THEY ARE DOING

The Texas Co. announces the appointment of R. J. Ronan as regional manager-technical services, with headquarters in Beacon, N. Y. Mr. Ronan is in charge of technical services for industries in 14 eastern and Middle Atlantic states. Frederic H. Holmes, vice-president in charge of the research and development department, said creation of the new regional office will make the company's technical services more readily available to industries in the area. The continuing expansion of Texaco's research and technical organization enables the company to provide a versatile and extensive program of fuel and lubrication services to industry, according to Mr. Holmes.

Custom Scientific Instruments, Inc. and Uster Corp. have entered into an agreement whereby the latter will be sole distributor for the Custom Tension Recordograph, a unit developed by Celanese Corp. of America and manufactured by Custom Scientific Instruments, Inc.

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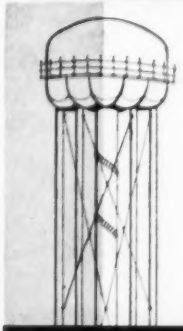

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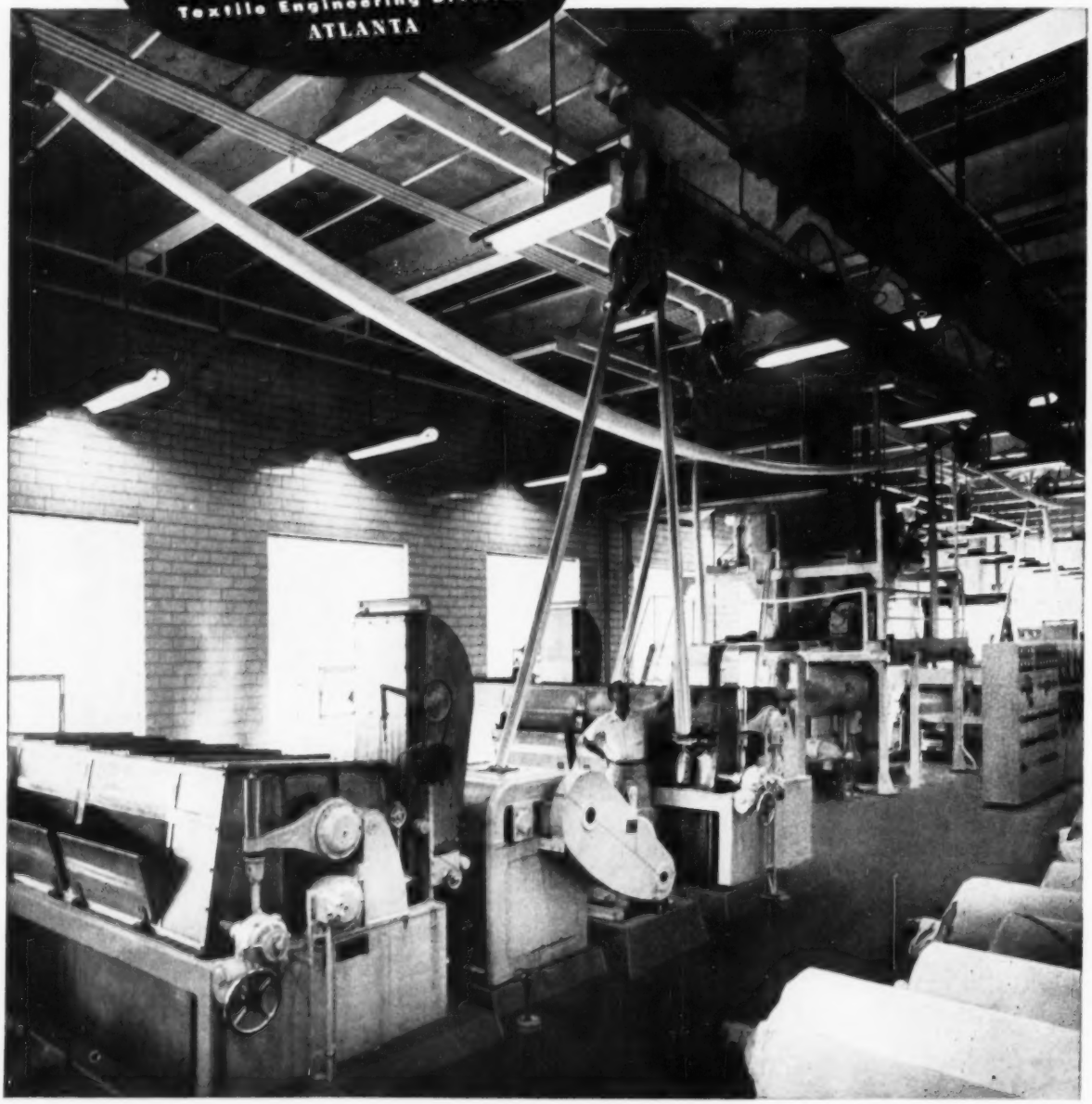

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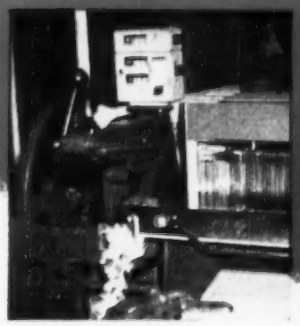

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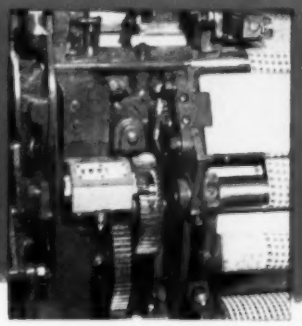

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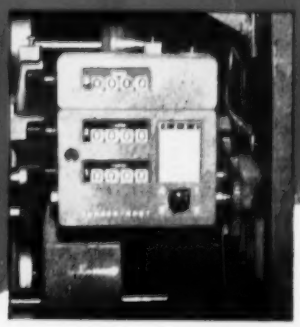

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